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*(Draft Regulations)*

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Chapter 1 – Program Overview

Commercial Vehicle Program Overview

The Commonwealth of Massachusetts has chosen Parsons and our partners to implement and maintain the Massachusetts Vehicle Check Program. The Federal Motor Carrier Safety Administration (FMCSA) is the agency of the U.S. Department of Transportation (USDOT) responsible for monitoring and developing safety standards for commercial motor vehicles operating in interstate commerce.

The following is from the FMCSA web-site:

“Our primary mission is to reduce crashes, injuries, and fatalities involving large trucks and buses.” In carrying out its safety mandate to reduce crashes, injuries, and fatalities involving large trucks and buses, FMCSA:

- Develops and enforces data-driven regulations that balance motor carrier (truck and bus companies) safety with industry efficiency;
- Harnesses safety information systems to focus on higher risk carriers in enforcing the safety regulations;
- Targets educational messages to carriers, commercial drivers, and the public; and
- Partners with stakeholders including Federal, State, and local enforcement agencies, the motor carrier industry, safety groups, and organized labor on efforts to reduce bus and truck-related crashes.

FMCSA is headquartered in Washington, DC. We employ more than 1,000 individuals, in all 50 States and the District of Columbia, dedicated to improving bus and truck safety and saving lives.”
Commercial

Enabling Legislation

The Massachusetts Vehicle Check Program defines an inspection of a motor vehicle conducted in accordance with the combined safety and emissions rules and regulations established by the Department and the Registry pursuant 540 CMR 4.00 and 310 CMR 60.02. 540 CMR 4.00 is adopted by the Registry of Motor Vehicles pursuant to the authority of M.G.L. c. 90, § 31. 540 CMR 4.00 establishes Rules and Regulations for the periodic Safety and Combined Safety and Emissions Inspections of all motor vehicles registered in the Commonwealth of Massachusetts under the authority of M.G.L. c. 90, § 7A. 540 CMR 4.00 also establishes regulations for the issuance of various inspection certificates pursuant to M.G.L. c. 90, § 7V, (a)(b)(c), and Regulations for the licensing of 540 CMR 4.00 stations and inspectors pursuant to M.G.L. c. 90, § 7W.

Vehicles Subject to Commercial Inspection

A Commercial Motor Vehicle is defined as any self-propelled or towed vehicle used on public highways to transport passengers or property when:

- The vehicle has a gross vehicle weight rating or gross combination weight rating of 10,001 or more pounds; or
- The vehicle is designed to transport more than 15 passengers, including the driver; or
- The vehicle is used in the transportation of hazardous materials in a quantity requiring placarding in accordance with the Hazardous Materials Regulations of the United States Department of Transportation; or
- Any commercial motor vehicle that singularly has a gross vehicle weight rating of 10,001 pounds or less and is designed to meet emissions standards, shall be submitted for an emissions inspection in addition to all applicable safety inspection requirements; or
- A single, full or semi-trailer with a manufacturer's gross vehicle weight rating over 3,000 lbs.
Standards for Inspection

The Massachusetts Vehicle Check Program will be carried out annually using the FMCSA safety inspection program using as a minimum, “49 CFR APPENDIX G Minimum Periodic Inspection Standards,” and provisions of 540 CMR 4.00 and 310 CMR 60.02.

Upon successful completion of the Massachusetts Vehicle Check Program Commercial Motor Vehicle Safety Inspection, a comprehensive Vehicle Inspection Report (VIR) will be created, which will identify the vehicle, inspector, and the status of the inspection. In addition to the VIR, a program inspection sticker indicating the vehicle has passed or failed the annual inspection will be affixed to the vehicle’s windshield.

Qualifications of Inspectors

The Massachusetts Commercial Motor Vehicle Safety Inspection Program will use the qualifications as outlined by 396.19 Inspector Qualifications. (See details in Appendix B.)

All persons licensed to inspect commercial motor vehicles will, at a minimum:

- Have one year of experience:
  - a. In a truck manufacturer-sponsored training program or similar commercial training program designed to train students in truck operation and maintenance; or
  - b. As a mechanic or inspector in a motor carrier maintenance program; or
  - c. As a mechanic or inspector in truck maintenance at a commercial garage, fleet leasing company, or similar facility; or
  - d. As a commercial motor vehicle inspector for a State, Provincial or Federal Government.
- Have successfully completed non-commercial training, and a commercial motor vehicle inspection training program that consists of 8 hours classroom and hands-on training, plus a 50-question written exam. The inspector must achieve a score of 80% or better in the written exam.
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- Be in possession of an active CDL license issued by the Registry of Motor Vehicles to operate a vehicle in the GVWR they are inspecting.
- Be in possession of an active inspector’s license for the vehicle class being inspected, by the Registry of Motor Vehicles.
- Be employed by an inspection station licensed to inspect commercial motor vehicles.

A commercial motor vehicle inspector must renew their training biennially by receiving additional recertification training course and completing an exam; and renew their Massachusetts Inspector License annually.
Safety is a very important subject. The Commonwealth of Massachusetts and its partners are firmly committed to maintaining a safe and healthy working environment at all project facilities.

A proactive approach to safety is the best way to prevent unnecessary accidents. Your safety and well being is **priceless**. We encourage every inspector to make safety his or her top priority. Meeting safety and health objectives requires the combined efforts of everyone in an organization. Investing time and energy to acquire the knowledge and skills to understand safe work practices could save your life and prevent serious injury to you and others. Safety training is recommended in the areas of chemical hazards, general safety, and emergency preparedness.

As vehicles and equipment are involved, performing an inspection could have potential hazards. In order to have a safe and productive environment, we suggest the following safety items be available at a minimum:

- First Aid Kit
- Eyewashes and safety shower
- Fire extinguishers
- Emergency exits
- Adequate ventilation
- Clean work area
- Properly lit area
- Protective clothing
- Hand and foot protection
- Material Safety Data (MSDS)
- Electrical outlets and extension cords that comply to UL and OSHA
Commercial

✓ Lifts and hoists with safety locks
✓ Guards and shields on all equipment
✓ Flammables stored in metal (fire proof) cabinets or containers
✓ Adequate Chock Blocks

Never wear loose clothing, ties, shorts, or open-toed shoes while working in an inspection facility. Remove rings, watches, and other jewelry. Never carry sharp tools in your pockets, as they may puncture your skin. Always stay clear of moving parts.

*Safety is Everyone’s Responsibility.*
Chapter 2 - Inspection Process

Inspector Log In

The inspector is required to login/authenticate with the Workstation prior to performing each inspection. The Workstation prompts the inspector to scan the barcode on his/her inspector ID.

Inspector access is denied to the Workstation if the inspector is unable to authenticate permission that is checked by the RMV. After the second failed attempt, a message is returned to the inspector describing why the test has been aborted and access denied.

Sample Inspection Machine Screens
(1) Perform Inspection
(2) Alternate Inspections
(3) Reprint VIR
(4) DLC Location Reference Information
(5) Safety and Emissions Regulations
(6) Data File Refresh
(7) Motorist Assistance Menu
(0) Return to Main Menu
Chapter 2 - Inspection Process

Vehicle Information Entry and Validation

Accuracy of the data collected by the inspection station is critical to the success of the inspection program. To begin the inspection, the inspector shall check that the vehicle’s identification number (VIN) and license plate match the registration document provided by the motorist. If they do not, the vehicle will be rejected from testing and the Workstation will automatically print a Turnaway Document. After the vehicle information has been verified, the inspector shall enter the VIN and registration information into the Workstation using the methods described below:

**VIN Entry:**

The VIN may be entered using one of the three following methods:

1. Scan of the motor vehicle’s VIN plate using the barcode reader.
2. Manual entry of the VIN using the keyboard or touch screen.
3. Scan of the 2D barcode printed on the vehicle’s previous inspection sticker.

   Note: this will only work for stickers printed by the new Workstations.

Caution needs to be used when entering the VIN into the Workstation. The letters “O,” “I,” or “Q” are never used in a vehicle identification number (VIN). When a 17-digit VIN is entered, it will be verified by the following: calculating the Check Digit (the 9th character of the entered VIN); the last four positions must be numeric characters; and the use of I, O, or Q are deemed invalid. If the 17-digit VIN does not meet the above requirements, the inspector will be required to re-enter the VIN.

**Registration Entry:**

The inspector must enter the vehicle’s registration state and plate type by selecting from drop-down menus, then enter the plate number. For section 5 vehicles (Repair, Farm,
Commercial

Owner/Contractor, and Transport), the inspector will be prompted to enter a registration number (instead of plate number) and suffix.

When printing stickers using the new Workstations: if the 2D barcode on the vehicle’s previous sticker is scanned, the registration data from the previous inspection will automatically be entered into the Workstation. In this case, the inspector must ensure the vehicle’s plate and registration documents match the data on the Workstation before proceeding.

**Kit Cars:**

If the vehicle being inspected is a Kit Car, Glider Kit, or Assembled Vehicle, the inspector must check the box called “Kit Car” on the vehicle entry screen.

**Connection To The VID:**

After the VIN and registration data is entered, the Workstation will connect to the VID and RMV Database (ALARS) to verify the vehicle registration is valid and that the inspection is allowed to proceed. If the Workstation cannot connect to the VID, the inspection will be automatically aborted. *No “offline” tests will be allowed.*

There can be no discrepancies in VIN and registration data entered by the inspector as compared to the recorded information in the RMV Database (ALARS). If there is a discrepancy, ALARS will prevent the inspection from continuing, the test will be aborted from testing and the Workstation will automatically print a Turnaway Document. ALARS will not identify the problem. It will be left to the inspector to determine whether a valid condition exists or if the vehicle information was not correctly entered.
Commercial

For Vehicles Not On ALARS:

Some vehicles may not match the ALARS database but may still receive an inspection:

1. Vehicles registered in a state other than Massachusetts. The issuing state of the vehicle’s registration plate shall be entered on the Workstation by selecting from a drop-down list of all 50 states (the list shall default to MA).

2. Federal Vehicles. The vehicle will be identified as a Federal plate on the Workstation by selecting “FD” from the drop-down list of issuing states.

3. New non-registered vehicles receiving their “new vehicle OBD II scan.” These vehicles must be inspected by accessing the New Vehicle OBD II Scan menu on the Workstation by a RMV-authorized new car dealer.

4. Massachusetts vehicles with unique plates, Section 5 transportation vehicles, (Repair, Farm, Owner/Contractor, and Transport) or Municipal plates may not have a VIN/plate match on ALARS. The VID and Workstation shall not reject these vehicles from testing.

NOTE: Vehicles with “Dealer” plates will NOT be inspected.

All other vehicles identified shall be automatically turned away from testing by the VID if there is no match on ALARS for the combination of vehicle VIN, plate number and plate type.

Additional Vehicle Information:

For all valid 17-digit VINs, the VID will attempt to “decode” the VIN and automatically enter the model year, fuel type, make, model, engine cylinders / displacement, and GVWR for the vehicle. The VID will also determine the proper test selection for the vehicle. Depending on the type of vehicle and the test selection, the following additional information may be required to be entered by the inspector:
• MA Vehicle Type (passenger car, truck, bus, etc.)
• Body Style (sedan, wagon, SUV, etc.)
• Transmission
• Odometer Reading (not required for trailers or converter dollies)
• Engine Year (diesel opacity only)
• Engine Make (diesel opacity only)
• Engine HP (diesel opacity only)
• Engine Max RPM (diesel opacity only)
• Diesel Turbo (diesel opacity only)
• Exhaust Pipe Diameter (diesel opacity only)

Double-blind entry is required for key-entered odometer readings. If the two values do not match, the process must begin again. The inspector is required to enter exactly the same value twice in a row before the process can continue. The software will not allow the inspector to copy and paste the information from the first data entry into the second data entry.

For diesel opacity tests, the VID will automatically enter the “diesel opacity only” fields if there is a previous diesel opacity test record in the database.

The inspector will be allowed to edit the vehicle information prior to performing the inspection, but certain critical fields such as “model year” and “fuel type” may be locked from editing.
Chapter 3 – Safety Inspection

Special Definitions

In addition to the definitions set forth in M.G.L. c 90, § 1. the following special definitions shall also apply:

(1) **Antique Motor Car** shall mean any motor vehicle which has been assigned an antique registration plate.

(2) **ALARS** shall mean the Automated Licensing and Registration Systems used by the Registry of Motor Vehicles.

(3) **Certificate of Inspection** shall mean a serially numbered, adhesive sticker, device, or symbol, as may be prescribed by the Registrar, indicating a motor vehicle has met the inspection requirements established by the Registrar. The Registrar may prescribe the use of one or more categories of said Certificates.

(4) **Certificate of Rejection** shall mean a serially numbered, adhesive sticker, device or symbol, as may be prescribed by the Registrar, indicating a motor vehicle has failed to meet the Safety and Combined Safety and Emissions Inspection requirements.

(5) **Certificate of Waiver** shall mean a serially numbered device or symbol, as may be prescribed by the Registrar, indicating that the requirement of passing the Emissions portion of the Combined Safety and Emissions Inspection has been waived for a vehicle pursuant to 540 CMR 4.00.

(6) Effective beginning October 1, 2008 **Class A License** shall mean the license issued to a Public or Fleet inspection station conducting non-commercial light duty gas and diesel inspections of vehicles 10,000 lbs (GVWR) or less.
(7) Effective beginning October 1, 2008 **Class B License** shall mean the license issued to a Public or Fleet inspection station conducting commercial and non-commercial light and medium duty gas and diesel inspections of vehicles 26,000 lbs. (GVWR) or less including light-duty pole or pull trailers only.

(8) Effective beginning October 1, 2008 **Class C License** shall mean the license issued to a Public or Fleet inspection station conducting all commercial medium and heavy duty inspections of vehicles over 10,000 lbs. (GVWR) including all trailers, semi-trailers and converter dollies.

(9) Effective beginning October 1, 2008 **Class D License** shall mean the license issued to a Public or Fleet inspection station conducting all commercial and non-commercial light, medium and heavy duty inspections of all vehicles including all trailers, semi-trailers and converter dollies.

(10) Effective beginning October 1, 2008 **Class E License** shall mean the license issued to a Public or Fleet inspection station conducting heavy duty commercial inspection of vehicles over 26,000 lbs. (GVWR) including all trailers, semi-trailers and converter dollies.

(11) Effective beginning October 1, 2008 **Class F License** shall mean the license issued to an individual or corporation performing inspections on commercial vehicles of all fuel types and weights, including all trailers, semi-trailers and converter dollies, owned or leased by a fleet, using mobile equipment for the performance of such vehicle inspections. The performance of commercial vehicle inspections at multiple repair and maintenance facilities owned by the fleet shall be subject to the following conditions:

(a) The repair facility shall consist of a building on-site with a discernible address for the purposes of fleet administration. Said fleet is contracting the inspection of existing commercial vehicles with gross vehicle weight ratings of 10,001
pounds or more, including all trailers, semi-trailers and converter dollies to the Class F Licensee at the same physical location.

(b) Vehicles owned or leased by said fleet and registered as "noncommercial" motor vehicles shall not be eligible for inspection by Class F Licensees.

(c) Noncommercial motor vehicles furnished for regular use by individual employees of said fleet shall not be eligible for inspection by Class F Licensees.

(d) All Class F Licensees utilizing mobile equipment for the testing of such commercial vehicles, trailers, semi-trailers or converter dollies owned or leased by said fleet shall have on-site OBD, opacity or any other emissions equipped workstation capable of performing such emissions inspections as required by 310 CMR 60.02.

(e) The annual number of commercially registered vehicles, trailers, semi-trailers or converter dollies inspected by Class F Licensees with gross vehicle weight ratings of less than 10,001 lbs shall not exceed the annual number of commercially registered vehicles with gross vehicle weight ratings of more than 10,001 lbs. (GVWR)

(12) Effective beginning October 1, 2008 Class M License shall mean the license issued to a Public or Fleet Inspection Station conducting motorcycle inspections.

(13) Commercial Motor Vehicle Inspector shall mean an individual licensed by the Registrar as properly qualified under 540 CMR 4.08(1)(h).

(14) Commercial Motor Vehicle shall mean any motor vehicle which is not a private passenger motor vehicle, antique motor car, motorcycle, auto home, house trailer, taxicab, ambulance, hearse, livery vehicle, or school pupil transport vehicle. A commercial motor vehicle shall include the following vehicles:

(a) The vehicle has a gross vehicle weight rating or gross combination weight rating of 10,001 or more pounds; or
(b) The vehicle is designed to transport more than 15 passengers, including the driver; or
(c) The vehicle is used in the transportation of hazardous materials in a quantity requiring placarding in accordance with the Hazardous Materials Regulations of the United States Department of Transportation. Any commercial motor vehicle that singularly has a gross vehicle weight rating of 10,001 pounds or less and is designed to meet emissions standards, shall be submitted for an emissions inspection in addition to all applicable safety inspection requirements; or
(d) A single, full or semi-trailer, used in commerce, with a manufacturer's gross vehicle weight rating over 3,000 lbs.

(15) Commissioner shall mean the Commissioner of the Department of Environmental Protection for the Commonwealth.

(16) DEP shall mean Department of Environmental Protection.

(17) Dynamometer shall mean a device which applies a load to a vehicle's drive wheels during an emissions inspection while the vehicle is being operated in a stationary, secure position to simulate actual driving conditions.

(18) Exempt Vehicles From Emission Standards shall mean any motor vehicle exempted under 310 CMR 60.02 and in accordance with M.G.L. c. 111, § 142M.

(19) Federal Motor Carrier Safety Regulations shall mean the most current published edition of Title 49 U.S.C. Parts 390 to 397 including appendix G as identified by USDOT/FMCSA.
(20) **Fleet Inspection Station** shall mean a business which owns or maintains a fleet of at least 25 motor vehicles and maintains a garage for the repair and maintenance of those vehicles and is licensed by the Registrar to perform the Safety or Combined Safety and Emissions Inspection on its motor vehicles or motor vehicles owned by other fleets that are in the same vehicle class.

(21) **Fleet Inspection Station for Commercial Motor Vehicles** shall mean an Inspection Station licensed by the Registrar to perform Safety or Combined Safety and Emissions Inspections on Commercial Motor Vehicles.

(22) **General Registration Holder** shall mean any manufacturer, dealer, repairman, owner-contractor, transporter, farmer, dealer in recreational vehicles, trailers, boat trailers, or forester, all as defined in M.G.L. c. 90, § 1 and regulated by 540 CMR 18.00, who has been issued a general registration plate pursuant to M.G.L. c. 90, § 5.

(23) **Inspection Station Agreement** shall mean the contract between the Network Contractor and the Inspection Stations which sets forth their respective responsibilities and duties.

(24) **Licensed Inspector** shall mean an individual licensed by the Registrar in accordance with 540 CMR 4.00 as properly trained to perform a Massachusetts Motor Vehicle Safety and/or Emissions Inspection.

(25) **Licensee** shall mean a holder of an Inspection Station License of any Class issued in accordance with 540 CMR 4.00.
(26) **Mobile Commercial Motor Vehicle Inspector** shall mean an individual, certified and licensed, who meets the requirements of 540 CMR 4.00 who may inspect commercial motor vehicles at a repair facility of any commercial motor vehicle operation that meets the minimum requirements for inspections prescribed for Commercial Vehicle Inspection Facilities by the Registrar.

(27) **Network Contractor** shall mean the private entity which contracts with the DEP and RMV to develop, manage and implement the enhanced emissions and safety inspection program on accordance with St. 1997, c. 240.

(28) **New Car Endorsement** shall mean an endorsement to a class A, B or D license which permits Class 1 automobile dealers to inspect new vehicles under 10,000 GVWR prior to delivery to a customer in accordance with 310 CMR 6.02 “Initial Inspection of New Motor Vehicles” and in accordance with policies and procedures promulgated by the Registrar.

(29) **Out of Service Criteria** shall mean the most current "Out of Service Criteria" as prescribed in the North American Uniform Out-of-Service Criteria published by the Commercial Vehicle Safety Alliance (CVSA).

(30) **Referee Station** shall mean a location which may be designated by the Registrar to verify the accuracy of inspections performed by Licensed Inspection stations and to grant certificates of waiver.

(31) **Registrar** shall mean the Registrar of Motor Vehicles.

(32) **Semi-Trailer** shall mean a trailer designed and used in combination with a tractor so that some part of the weight of the trailer and that of its load rests upon, and is carried by, the tractor.
(33) Effective beginning October 1, 2008 **7D Endorsement** shall mean an endorsement which permits the Licensee to inspect 7D (pupil transport) vehicles in accordance with M.G.L. chapter 90, section 7D, 540 CMR 21.00 and policies and procedures promulgated by the Registrar.

(34) **Trailer** shall mean any vehicle or object on wheels and having no motor power of its own, but is drawn by, or used in combination with, a motor vehicle.

(35) **Turnaway Document** shall mean a document created by a Workstation and provided to an operator by an inspection station explaining the reason(s) a particular vehicle can not be tested.

(36) **Windshield Replacement Certificate** shall mean a serially numbered adhesive sticker, device or symbol as prescribed by the Registrar to be used in conjunction with any legible valid Certificate of Inspection, irrespective of any void displayed, removed due to the replacement of a windshield and displayed on the newly installed windshield on the same vehicle. Such Certificate shall be issued in accordance with the policies and procedures established by the Registrar.

(37) **Workstation** shall mean the complete set of inspection equipment approved by the Department and required by the Registrar for an inspection station.
Chapter 3 – Safety Inspection

Procedures for Inspection of Commercial Motor Vehicles

(1) Prior To Beginning Inspection

A visual check of the vehicle must be made to determine that ice and snow accumulation or the condition of the suspension system, will not impede or interfere with the proper aiming of headlamps. The Certificate of Registration must be inspected and the information contained thereon, including license plate, vehicle description, and vehicle identification number, must be verified by observation of the subject vehicle. The information contained on the Certificate of Registration must also be matched with the vehicle information accessible to the workstation. The data appearing on the Registration Certificate, should match the data appearing on the vehicle license plate, and the vehicle identification number, and description must match in order for the inspection to proceed. No fee will be assessed for an inspection which does not proceed due to a data match failure.

(a) A turnaway document must be provided for all vehicles not authorized by ALARS.

(b) No certificate of registration need be produced for vehicle having a general registration issued in accordance with the provisions of M.G.L. c. 90, § 5. Either a photocopy of the original certificate of registration or the original certificate of registration may be produced for other motor vehicles.

(c) A licensed inspector must refuse to conduct an inspection if the motor vehicle's registration is determined to be invalid.
(2) **Inspection Of The Vehicle**

All inspections must be performed in accordance with the applicable provisions of 540 CMR 4.00 and 310 CMR 60.02 by licensed inspectors in the approved inspection bay only.

**NOTE: Inspectors must first collect the proper fee.**

(a) License plate(s), must be undamaged, securely mounted, clean and clearly visible. No bumper, trailer hitch or other accessory may interfere with a clear view of the license plates. The license plate must be mounted in the proper location on the rear of the vehicle if the vehicle has been issued one plate. Both license plates must be mounted in the proper location on the rear and front of the vehicle, if the vehicle has been issued two plates. Any decorative license plate or license plate replica not issued by the Registry of Motor Vehicles on which any jurisdiction name appears must be removed from the vehicle.

(b) General Registration Holders, every motor vehicle in possession of a general registration holder must be checked for the proper display of the compliance decal issued pursuant to 540 CMR 18.03. The Vehicle Identification Number (V.I.N.) and Registration Number indicated on the decal must correspond with said number of the vehicle inspected. This requirement does not apply to motor vehicles owned and registered by a dealer.

(c) Upon the completion of the inspection, the inspector will remove the old certificate of inspection from the windshield, and affix the new Certificate of Inspection and provide the motorist with all inspection documentation and program literature as required.
(3) **Perform Emissions Testing Requirements And Procedures:**

(a) Exemptions. The following motor vehicles are exempt from emissions testing. Any vehicle exempted pursuant to 310 CMR 60.02(3)(b) and in accordance with M.G.L.c.111, §142M.

(b) Conformance with Environmental Standards. All Emissions Inspections must be performed in accordance with the applicable provisions of 310 CMR 60.02 and 540 CMR 4.00, and any written policies or procedures provided by the Registrar or Commissioner.

(4) **Reflectors**

Every commercial motor vehicle or trailer weighing, with its load, more than 12,000 pounds must be equipped with a red reflector at the rear.

(5) **Chock Blocks**

Every bus having a seating capacity of more than seven passengers, every truck weighing, unloaded, more than 4,000 pounds and every tractor, trailer, semi-trailer or combination which is not equipped with positive spring loaded, air parking brakes, must be equipped with one pair of adequate safety chock blocks.

(6) **Splash Guards**

Every motor vehicle or trailer, except passenger motor vehicles, must be equipped with suitable guards which will effectively reduce the spray or splash, to the rear, of mud, water, or slush, caused by the rear wheels.

(7) **Marker Light**

Commercial motor vehicles and trailers, having a registered carrying capacity of three tons or over, must have an amber light attached to the extreme left of the front of the vehicle, so attached and adjusted as to indicate the extreme left lateral extension of the vehicle or load.
(8) **Horn**

Sound horn to test for adequate signal. The horn must be securely fastened to the vehicle.

(9) **Warning Devices**

Every commercial motor vehicle or trailer that is required to have a backup warning device must be checked for proper operation of said device. Every commercial motor vehicle equipped with a dump body must be equipped with an adequate audible warning system to alert the operator when the dump body is in an upright and elevated position.

(10) **Bumpers**

The existence of broken or bent bumpers, fenders, exterior sheet metal or moldings having sharp edges due to damage, body rot, or abnormal protrusions extending beyond normal vehicle extremities so as to constitute a danger to pedestrians and other motor vehicle traffic will be reason for rejection. If bumper face plates are removed, bumper brackets must also be removed.

**NOTE:** *Vehicles equipped with air bags must have on OEM or equivalent front bumper. The vehicle hood, door(s), luggage compartment lid, and battery or engine compartment doors or lids, if so equipped, must be capable of being firmly latched.*

(11) **Fenders**

Front and rear fenders must be in place. Every commercial motor vehicle which is equipped with tires which extend beyond the fenders or body of the vehicle must be equipped with flaps or suitable guards to reduce such spray or splash to the rear and side.
(12) **Seat Belts**

Must be inspected to assure that all are maintained in good order. The Requirements of Title 49 Code of Federal Regulations, Part 393.93 will apply.

(13) **Air Bags**

Effective beginning October 1, 2008, vehicles so equipped must comply with 49 Code of Federal Regulations, Parts 571 through 595. The inspector must check for proper operation of the airbag malfunction indicator lamp. If not operating as designed, or if the lamp indicates a malfunction in the airbag system, or if any airbag originally equipped in the vehicle is deployed or is missing the vehicle will be rejected.

(14) ** Procedures For Inspecting Certain Commercial Motor Vehicles And Trailers Pursuant To Federal Regulation.**

49 CFR Parts 390 through 397 of Title 49, including Appendix G to Sub-Chapter B, as appearing or as may be revised in the Code of Federal Regulations, as related to the inspection of Commercial Motor Vehicles or any activity related thereto, are hereby adopted as the Regulations of the Registry of Motor Vehicles. Said regulations are applicable to trucks with a gross vehicle weight rating of over 10,000 pounds, buses transporting more than 15 passengers including the driver or any motor vehicle transporting hazardous materials in a quantity requiring placarding in accordance with the Hazardous Material Regulations of the United States Department of Transportation, parts 171 through 180 of Title 49, Code of Federal Regulations. In the event of any conflict between these regulations and any other regulations or law of the Commonwealth of Massachusetts, the stricter more stringent standard will apply. A Certificate of Rejection will be issued to any vehicle or trailer submitted for inspection if any of the conditions noted in the following inspection procedures exist.
# Chapter 3 – Safety Inspection

## Brake Systems

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<th>FAIL</th>
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<td></td>
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</tr>
<tr>
<td>Air Compressor</td>
<td></td>
<td></td>
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<tr>
<td>Electric Brakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Brakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vacuum System</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equipment:**

Air tools, hand tools, jack of sufficient capacity to lift the front axle of the heaviest vehicle inspected. Two jack stands; with a minimum rated capacity capable of holding the vehicle to be inspected, chock blocks to prevent the vehicle from rolling; clock, watch, or stopwatch, tape measure and feeler gage (to measure brake adjustment).

**Procedure:**

The inspector should walk around the vehicle and perform a visual inspection and chock the wheels before lifting the vehicle.

**NOTE:** May require a second person to perform a proper inspection.
Items To Inspect:

Air and Hydraulic Brakes

Brake System / Service Brakes

Inspect For And Reject If:

a. The brake systems being inspected are not in accordance with the manufacturer(s) recommended procedures. Absence of braking action of any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge, S-cam, cam, or disc brake).

b. Missing or broken mechanical components including shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.

c. Loose brake components including air chamber spiders and cam shaft support brackets.

d. Audible air leak at brake chamber (example-ruptured diaphragm, loose chamber clamp, etc.).

e. Re-adjustment limits are not at the maximum stroke at which brakes should be readjusted (see below). Any brake 1/4" or more past the re-adjustment limit or any two brakes at the readjustment limit or less than 1/4" beyond the re-adjustment limit will be cause for rejection. Stroke must be measured with the engine off and reservoir pressure of 80 to 90 PSI with brakes fully applied.
Air Brake System

Leakage Test

a. Start the vehicle engine and run at fast idle until air pressure on gauge reaches cut-off point. Cut-off must occur at 90 pounds per square inch or more, or manufacturer specifications. Cut-in pressure should be no lower than 55 PSI or 1/2 the governor cut out pressure, or manufacturer specifications.

b. Stop engine and observe pressure gauge. With service brakes in released position, if drop in pressure exceeds 2 PSI in one minute for a single vehicle, 3 PSI for a combination vehicle or if audible leakage is evident, the vehicle will be rejected.

c. Start engine and allow system to reach maximum pressure. Stop engine and apply service brakes, at which time a pressure drop of 5 PSI to 15 PSI will occur and system will be stabilized. With brakes in applied position, if drop in pressure exceeds 3 PSI in one minute for a single vehicle, 4 PSI per minute for a combination vehicle, or if audible leakage is evident, the vehicle will be rejected.
Procedure:

d. Cam Brakes

On vehicle with Cam Brakes, mark each brake chamber push rod at the face of the brake chamber with the brakes released. Apply the air brakes fully, minimum air pressure of 85 PSI, and measure the distance the push rod travels from the face of the chamber to the mark previously made when the brakes were released. This measurement is the push-rod stroke.

Inspect For And Reject If:

The Cam Brakes’ push-rod travel exceeds the maximum stroke listed in the following tables.
### BOLT TYPE CHAMBER DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Effective area (sq. in.)</th>
<th>Outside dia. (in.)</th>
<th>Maximum stroke at which brakes should be readjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>6 15/16</td>
<td>1 3/8</td>
</tr>
<tr>
<td>B</td>
<td>24</td>
<td>9 3/16</td>
<td>1 3/4</td>
</tr>
<tr>
<td>C</td>
<td>16</td>
<td>8 1/16</td>
<td>1 3/4</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>5 1/4</td>
<td>1 1/4</td>
</tr>
<tr>
<td>E</td>
<td>9</td>
<td>6 3/16</td>
<td>1 3/8</td>
</tr>
<tr>
<td>F</td>
<td>36</td>
<td>11</td>
<td>2 1/4</td>
</tr>
<tr>
<td>G</td>
<td>30</td>
<td>9 7/8</td>
<td>2</td>
</tr>
</tbody>
</table>

### ROTOCHAMBER DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Effective area (sq. in.)</th>
<th>Outside dia. (in.)</th>
<th>Maximum stroke at which brakes should be readjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
<td>4 9/32</td>
<td>1 1/2</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>4 13/16</td>
<td>1 1/2</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>5 13/32</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>5 13/16</td>
<td>2</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>6 13/32</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>7 1/16</td>
<td>2 1/4</td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>7 5/8</td>
<td>2 3/4</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>8 7/8</td>
<td>3</td>
</tr>
</tbody>
</table>
### CLAMP TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Effective area (sq. in.)</th>
<th>Outside dia. (in.)</th>
<th>Maximum stroke at which brakes should be readjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
<td>4 1/2</td>
<td>1 1/4</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>5 1/4</td>
<td>1 3/8</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>5 11/16</td>
<td>1 3/8</td>
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<tr>
<td>16</td>
<td>16</td>
<td>6 3/8</td>
<td>13/4</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>6 24/32</td>
<td>1 3/4</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>7 7/32</td>
<td>1 3/4 (Note: 2” for long stroke design)</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>8 3/32</td>
<td>2</td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>8 3/32</td>
<td>2 1/4</td>
</tr>
</tbody>
</table>

Below is a picture of a Brake Chamber Tool that is used to quickly & easily identify clamp type brake chambers from type 9 to type 36.
Procedure:

e. Wedge Brakes

On vehicle equipped with Wedge Brakes, remove the inspection hole cover at each dust shield and with the brakes released, scribe a line on the edge of the brake lining. Apply the air brakes fully, minimum air pressure of 85 PSI, and measure the distance the brake lining travels (See Measuring the Wedge Brake figure).

Inspect For And Reject If:

The Wedge Brakes have more than 1/16” brake shoe travel.

Wedge Brake Data

Movement of the scribe mark on the lining must not exceed 1/16 inch.
NOTE: Use caution when checking brake adjustment. The visual portion of the inspection should have caught defective components such as defective brake chambers that can cause injury when brakes are applied.

f. Brake linings or pad is not attached firmly to the shoe.

g. Saturated with oil, grease, or brake fluid; or

h. Non-steering axles. Lining with a thickness less than 1/4 inch at the shoe center for air drum brakes, 1/16 inch or less at the shoe center for hydraulic and electric drum brakes, and less than 1/8 inch for air disc brakes.

i. Steering axles. Lining with a thickness less than 3/16 inch at the shoe center for drum brakes, less than 1/8 inch for air disc brakes, and 1/16 inch or less for hydraulic disc and electric brakes.

j. Missing brake on any axle required to have brakes.

NOTE: On trucks and tractors, check for presence of brakes. Reject if there is a missing or disconnected brake on any wheel. However, there should be no evidence that front brakes ever existed. (i.e. backing plate assemblies, drums, or rotor are present).

k. Mismatch across any power unit steering axle of:
   (a) Air chamber sizes
   (b) Slack adjuster effective length.

Service Brake

a. Operate the vehicle to check the service brakes.
NOTE: The service brakes will be tested at a speed of between four (4) and eight (8) MPH.

Inspect For And Reject If:

The service brakes on the vehicle are not reasonably equalized so that the vehicle does not pull to either side when applied. A test with the brake meter must be made at a speed of 15 to 25 MPH in all questionable cases. Service and parking brakes must be adequate to stop the vehicle from a speed of 20 MPH in not more than the following distances.

NOTE: The service brakes on a power unit must be tested at 20 MPH to attain the following stopping distances with no significant pull.

<table>
<thead>
<tr>
<th>Brakes</th>
<th>Vehicle Type</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service (foot) Brake</td>
<td>Pleasure Vehicles</td>
<td>30 feet</td>
</tr>
<tr>
<td></td>
<td>Trucks and Buses</td>
<td>40 feet</td>
</tr>
<tr>
<td>Parking (hand) Brake</td>
<td>All Vehicles</td>
<td>80 feet</td>
</tr>
</tbody>
</table>

Parking Brake System

a. Apply parking brake (air, hydraulic or lever controlled). Visually check to make sure parking brake(s) are applied upon actuation.

Inspect For And Reject If:

The vehicles park brakes do not apply.

b. Visually check park brake components for any defects.
**Inspect For And Reject If:**

There are any missing or broken rods, levers, broken springs or any other locking device used to hold the vehicle in a parked mode.

c. Operate the vehicle to test the parking brake.

**NOTE:** The parking brake on all vehicles must be tested by sufficiently accelerating the motor vehicle in the lowest forward gear against the brake in the applied position.

**Inspect For And Reject If:**

While driving the vehicle into the bay the parking brake will not hold the vehicle stationary.

**Brake Drums Or Rotors**

**Inspect For And Reject If:**

a. Any external crack or cracks that open up upon brake application (do not confuse short hairline heat check cracks with flexural cracks).

b. Any portion of the drum or rotor missing, or in danger of falling away.
Brake Hose

**Inspect For And Reject If:**

a. Any brake hose with any damage extending through the outer reinforcement ply. (Rubber impregnated fabric cover is not a reinforcement ply). Thermoplastic nylon may have braid reinforcement or color differences between cover and inner tube. Exposure of second color is cause for rejection.

b. Bulge or swelling when air pressure is applied.

c. Any audible leaks.

d. Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube).

e. Air hoses cracked, broken or crimped.

Brake Tubing

**Inspect For And Reject If:**

a. Any audible leak.

b. Tubing cracked, damaged by heat, broken or crimped.

Low Pressure Warning Device Test

Apply service brakes repeatedly until the audible and visual low pressure indicator comes on. Reject vehicle if indicator comes on above 70 PSI or below 50 PSI and if the indicator
is inoperable. A gauge indicating pressure is not deemed to be an adequate low pressure indicator.

*Condition of Air Brake Components*

During the inspection of the vehicle the conditions of visible air brake components should be checked. The vehicle must be rejected if tubing or hoses are cracked, chafed, or restricted or are insecurely fastened or improperly retained.

*Tractor Protection Valve*

*Inspect For And Reject If:*

a. Any valve is missing or inoperable.

b. Park button does not pop out within a range of 25 – 45 PSI.

*NOTE: This requires the power unit to be hooked up to a trailer or the use of a dummy glad hand. Connect both service and supply lines to trailer, or connect dummy glad hand to supply line. With supply air built up and trailer dash button in (releasing trailer brakes), break the supply connection.*

*Air Compressor*

*Inspect For And Reject If:*

a. Any compressor drive belt(s) in condition of impending or probable failure.

b. Loose compressor mounting bolts.
c. Cracked, broken or loose pulley.

d. Cracked or broken mounting brackets, braces or adaptors.

Electric Brakes

*Inspect For And Reject If:*

a. There is an absence of braking action on any wheel required to have brakes.

b. Missing or inoperable breakaway braking device.

Hydraulic Brakes

( Including Power Assist over Hydraulic and Engine Driven Hydraulic Booster)

*Inspect For And Reject If:*

a. The master cylinder less than 1/4 full. (If no minimum capacity markings are available or not filled to its designed minimum capacity if marked).

b. Has a visible leak.

c. No pedal reserve with engine running except by pumping pedal.

d. Power assist unit fails to operate.

e. Seeping or swelling brake hose(s) under application of pressure.
f. Missing or inoperative check valves.

g. Any visually observed leaking hydraulic fluid in the brake system.

h. Any hydraulic hose(s) abraded (chafed) through outer cover to fabric layer.

i. Fluid lines or connections leaking, restricted, crimped, cracked or broken.

j. Brake failure or low fluid warning light on and/or inoperative.

**Power Assist System**

*Inspect For And Reject If:*

On Power Assisted Systems:

a. The pedal assist is not felt when the engine is started or vehicles that use an electric-motor back-up system does not operate properly with the engine off. (Some vehicles with this type of system may require the ignition to be on).

b. Any hydraulic leaks with hydraulic boost system.

c. Any warning device that is on or not working.
Vacuum System

Procedure:

a. Stop engine, then depress brake pedal several times to eliminate all vacuum to the vacuum / power booster.

b. Depress pedal with a light foot-force (25 lbs) when the vehicle is immobile.

c. While maintaining force on the pedal, start engine and observe if pedal moves slightly downward when engine starts.

Inspect For And Reject If:

The brake pedal does not move slightly downward as the engine is started while force is applied to the brake pedal.

Any vacuum system which:

a. Has insufficient vacuum reserve to permit one full brake application after engine is shut off.

b. Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer over to cord ply, crimped, cracked, or has collapse of vacuum hose(s) when vacuum is applied.

c. Lacks a working low-vacuum warning device if equipped.
Chapter 3 – Safety Inspection

Coupling Device

<table>
<thead>
<tr>
<th>Coupling Devices</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Fifth Wheels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Pintle Hooks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Drawbar/Towbar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Drawbar/Towbar Tongue</td>
<td></td>
<td></td>
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<tr>
<td>e. Safety Devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Saddle Mounts</td>
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</tr>
</tbody>
</table>

**Equipment:**

Pry bar or similar tool to check for movement in coupling devices such as fifth wheels and mountings, and a tape measure to determine movement.

**Procedure:**

Start with a visual inspection. Use a pry bar and/or industry prescribed method to measure for any movement measurement as required for the coupling device inspection.

**Items To Inspect:**

If equipped: Fifth wheels, sliders, lower couplers, pintle hooks, drawbar/towbar eye, drawbar/towbar tongue, safety devices, cables, saddle-mounts.

**Inspect For And Reject If:**

A. **Fifth Wheel**

1. Mounting to frame

   a. Any fasteners missing or ineffective.
b. Any movement between mounting components.

c. Any mounting angle iron cracked or broken.

2. Mounting plates and pivot brackets.

a. Any fasteners missing or ineffective.

b. Any welds or parent metal cracked.

c. More than 3/8 inch horizontal movement between pivot bracket pin and bracket.

d. Pivot bracket pin missing or not secured.

3. Sliders

a. Any latching fasteners missing or ineffective.

b. Any fore or aft stop missing or not securely attached.

c. Movement more than 3/8 inch between slider bracket and slider base.

d. Any slider component cracked in parent metal or weld.
4. Lower Coupler

a. Horizontal movement between the upper and lower fifth wheel halves exceeds 1/2 inch.

b. Operating handle not in closed or locked position.

c. Kingpin not properly engaged.

d. Separation between upper and lower coupler allowing light to show through from one side to the other.

**NOTE:** All the above requires the vehicle to be hooked up to a trailer.

e. Cracks in the fifth wheel plate.

**NOTE:** Exceptions - cracks in fifth wheel approach ramps and casting shrinkage cracks in the ribs of the body of a cast fifth wheel.

f. Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.

B. Pintle Hooks

1. Mounting to frame

   a. Any missing or ineffective fasteners.

**NOTE:** A fastener is not considered missing if there is an empty hole in the device but no corresponding hole in the frame or vice versa.
b. Mounting surface cracks extending from point of attachment (e.g. cracks in the frame at mounting bolt holes).

c. Loose mounting.

d. Frame crossmember providing pintle hook attachment cracked.

2. Integrity

a. Cracks anywhere in pintle hook assembly.

b. Any welded repairs to the pintle hook.

c. Any part of the horn section reduced by more than 20%.

d. Latch insecure.

C. Drawbar/Towbar Eye

1. Mounting

a. Any racks in the attachment welds.

b. Any missing or ineffective fasteners.

2. Integrity

a. Any cracks.

b. Any part of the eye reduced by more than 20%.
D. Drawbar/Towbar Tongue

1. Slider (power or manual)
   a. Ineffective latching mechanism.
   b. Missing or ineffective stop.
   c. Movement of more than 1/4 inch between slider and housing.
   d. Any leaking, air or hydraulic cylinders, hoses, or chambers (other than slight oil weeping, normal with hydraulic seals).

2. Integrity
   a. Any cracks.
   b. Movement of 1/4 inch between subframe and drawbar at point of attachment.

E. Safety Devices

1. Safety device missing.

2. Unattached or incapable of secure attachment.

3. Chains and hooks.
   a. Worn to the extent of a measurable reduction in link cross section.
   b. Improper repairs including welding, wire, small bolts, rope and tape.
4. Cable

   a. Kinked or broken cable strands.

   b. Improper clamps or clamping.

F. Saddle Mounts

1. Method of attachment.

   a. Any missing or ineffective fasteners.

   b. Loose mountings.

   c. Any cracks or breaks in a stress or load bearing member.

   d. Horizontal movement between upper and lower saddle-mount halves exceeds 1/4 inch.
### Chapter 3 – Safety Inspection

**Exhaust System**

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
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</thead>
<tbody>
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</tbody>
</table>

**Exhaust System**

a. Any exhaust system determined to be leaking at a point forward of or directly below the driver/sleeper compartment.

b. A bus exhaust system leaking or discharging to the atmosphere.

c. No part of the exhaust system of any motor vehicle must be so located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.

**Equipment:**

None

**Procedure:**

Visually examine complete exhaust system from engine to outlet.

**Items To Inspect:**

Starting with the exhaust manifold, all piping, flanges, connectors, muffler(s), resonator(s), Catalytic Converter(s) and/or particulate traps if installed.

**Inspect For And Reject If:**

1. Any exhaust system is determined to be leaking at a point forward of or directly below the driver/sleeper compartment.

2. A bus exhaust system is leaking:

   a. Gasoline powered. In excess of six inches forward of the rearmost part of the bus.  
   (See 540 CMR 7.00 for school buses).
b. Other than gasoline powered. In excess of 15 inches forward of the rear most part of the bus. (See 540 CMR 7.00 for school buses).

c. Other than gasoline powered. Forward of a door or window designed to be opened (except emergency exits).

3. No part of the exhaust system of any motor vehicle must be located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle. Also any part of the exhaust system that discharges below the fuel tank or fuel filler neck.

4. The exhaust system, exhaust manifold(s), exhaust pipe(s), muffler(s), and tailpipe(s), if designed to be so equipped, must be tight and free of leaks. System components must be securely fastened with fasteners in place and undamaged.

5. **IMPORTANT**: A gasoline or diesel powered vehicle will be rejected if, at normal operating temperature, and at any constant speed over 15 MPH (approximately 1,000 to 1,500 RPMs) visible black or blue exhaust emissions are evident.

**NOTE: Vehicles equipped with Retrofit kits must operate as designed.**

*Below pictures are as per design for a Retrofit*
Chapter 3 – Safety Inspection
Fuel System

Fuel System

<table>
<thead>
<tr>
<th></th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible leak</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fuel filler cap missing</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fuel tank not securely attached</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fuel tank cap visual check</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Equipment:
None

Procedure:
Visually inspect fuel tanks, brackets, mounting components and lines.

NOTE: This includes fuel systems for any vehicle, including refrigeration and/or heating and standby or auxiliary units. This also includes all fuel types: Diesel, Gasoline, Natural Gas, Liquefied Natural Gas or any other type of fuel used.

Items To Inspect:
Fuel tank and Fuel lines

Inspect For And Reject If:

1. A fuel system with any leak at any point.

2. A fuel filler cap is missing.
3. A fuel tank not properly secured to the motor vehicle by reason of loose, broken or missing mounting bolts, brackets and fuel tank straps.

NOTE: Some fuel tanks use springs or rubber bushings to allow for movement.

4. Fuel lines

   a. A fuel line that is not completely enclosed in a protective housing must not extend more than two inches below the fuel tank or its sump.

   b. Diesel fuel crossover, return, and withdrawal lines which extend below the bottom of the tank or sump must be protected against damage from impact.

   c. Secured against chafing, kinking, or other causes of mechanical damage.

NOTE: No part of the fuel system of a bus manufactured on or after January 1, 1973 is located within or above the passenger compartment.
Chapter 3 – Safety Inspection

Lighting Devices

<table>
<thead>
<tr>
<th>Lighting Devices</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headlights</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Headlight Adjustment</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Taillights</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Stoplights</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Turn Signals</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Marker/Clearance Lights</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Equipment:**

Mechanical aimer, blackboard, whiteboard and headlight aiming stick.

**Procedure:**

Visually inspect headlights and all other lights, and use the mechanical aimer or screen to check for proper aim.

**Items To Inspect:**

Headlights, Taillights, Stoplights, Turn Signals, and Marker/Clearance Lights.

**Headlight Aiming Information:**

**Equipment:**

Marked screen and adequate test area.
Procedure:

**Headlight Aiming By The Blackboard Method / 30 Foot Bay:**
First, position the vehicle so that it is square with the aiming screen and with the front of the headlamps directly over a reference line which has been painted on the floor (ten feet from the blackboard on a flat level floor). Next, locate the center line on the floor so that it is in line with the center of the vehicle. Move the vehicle as needed until it is in alignment with these two points. Using the approved 48-inch measuring stick, take two measurements: (1) from the center of the vehicle to the center of the bulb and (2) from the ground to the center of the bulb. Then, applying these figures to the headlight board, the hot spot of the bulb should fall two inches down and two inches to the right of the intersecting lines. A slight deviation of up to two inches to the left or right, or below is acceptable. Depending on the design of the vehicle’s headlamps, you may or may not have to check the alignment of the high beams. If the vehicle uses separate bulbs and housings for high beams, a second measurement and alignment for the high beam headlamps will be needed.

**Headlight Aiming By The Whiteboard Method / 45 Foot Bay:**
First, position the vehicle so that it is square with the aiming screen and with the front of the headlamps directly over a reference line which has been painted on the floor (twenty five feet from the aiming screen on a flat level floor). Next, locate the center line on the floor so that it is in line with the center of the vehicle. Move the vehicle as needed until it is in alignment with these two points. The inspector must adjust the crossbar and vertical sliders to the proper measurement for each vehicle inspected. Using the approved 48-inch measuring stick, take two measurements: (1) from the center of the vehicle to the center of the bulb and (2) from the ground to the center of the bulb. Then, applying these figures to the headlight board, the hot spot of the bulb should fall four inches down and four inches to the right of the intersecting lines. A slight deviation of up to four inches to the left or right, or below is acceptable. Depending on the design of the vehicle’s headlamps, you may or may not have to check the alignment of the high beams. If the vehicle uses separate bulbs and housings for high beams, a second measurement and alignment for the high beam headlamps will be needed.
**Headlight Aiming By The Whiteboard Method:**

Whiteboard aiming screens require prior approval by RMV.

**Headlight Aiming By The Mechanical Aimer Method:**

The use of a mechanical aimer requires prior approval by RMV.

**Headlight Aiming By The Vehicles Equipped With Aimers:**

Using the on-board headlamp aiming device (on vehicles equipped) is not allowed by Registry (RMV).

**A. Headlights**

**Inspect For And Reject If:**

1. Any motor vehicle that does not have headlights.

2. A headlight or headlight system does not meet SAE or DOT standards.

3. Any headlight fails to light in the low or high position.

4. Any lens that is broken.

5. Any headlight that is not securely mounted.

6. If horizontal aim is not within specifications.

7. If vertical aim is not within specifications.
B. *All Other Lamps: Taillights, Stoplights, Turn Signals And Marker/Clearance Lights.*

**Inspect For And Reject If:**

1. Taillights/Stop Lights
   
   a. Is not equipped with at least two red tail lamps and at least two red stop lamps.
   
   b. Any light that fails to light.
   
   c. Any lamp or lens that is broken or has pieces missing.
   
   d. Does not meet SAE or DOT standards.
   
   e. Any lamp that is not securely mounted.

2. Directional Lights/Hazard Warning Lights/Indicator Lights
   
   a. Any vehicle not equipped with directional lights.
   
   b. Any light that is not SAE or DOT approved.
   
   c. Any lamp that does not operate properly in all switch positions.
   
   d. Any lamp that is not securely mounted.
   
   e. Any lamp or lens that is broken or has a piece missing.
   
   f. Any lamp that is not visible front or rear.
g. Hazard warning light does not operate properly (e.g.; with ignition off).

3. Any Other Required Lights/Lamps

a. Any light/lamp missing.

b. Any light/lamp inoperative.

c. Any light/lamp not securely mounted.

d. Any light/lamp not SAE or DOT approved.

e. Any light/lamp wiring that are frayed, bare, or not properly secured.

Lighting Requirements

The following addresses and specifies the requirements for all lighting devices and associated equipment.

FEDERAL MOTOR CARRIER SAFETY REGULATIONS. PART - 393: Parts and accessories necessary for safe operation.

Subpart B- Lamps, Reflective Devices, and Electrical Wiring:

49 CFR 393 Parts and Accessories Necessary for Safe Operation
§393.11 Lamps and reflective devices.

(a)(1) Lamps and reflex reflectors. Table 1 specifies the requirements for lamps, reflective devices and associated equipment by the type of commercial motor vehicle. The diagrams in this section illustrate the position of the lamps, reflective devices and
associated equipment specified in Table 1. All commercial motor vehicles manufactured on or after December 25, 1968, must, at a minimum, meet the applicable requirements of 49 CFR 571.108 (FMVSS No. 108) in effect at the time of manufacture of the vehicle. Commercial motor vehicles manufactured before December 25, 1968, must, at a minimum, meet the requirements of subpart B of part 393 in effect at the time of manufacture.

(a)(2) Exceptions: Pole trailers and trailer converter dollies must meet the part 393 requirements for lamps, reflective devices and electrical equipment in effect at the time of manufacture. Trailers which are equipped with conspicuity material which meets the requirements of §393.11(b) are not required to be equipped with the reflex reflectors listed in Table 1 if-

(a)(2)(i) The conspicuity material is placed at the locations where reflex reflectors are required by Table 1; and

(a)(2)(ii) The conspicuity material when installed on the motor vehicle meets the visibility requirements for the reflex reflectors.

(b) Conspicuity Systems. Each trailer of 2,032 mm (80 inches) or more overall width, and with a GVWR over 4,536 kg (10,000 pounds), manufactured on or after December 1, 1993, except pole trailers and trailers designed exclusively for living or office use, shall be equipped with either retroreflective sheeting that meets the requirements of FMVSS No. 108 (S5.7.1), reflex reflectors that meet the requirements FMVSS No. 108 (S5.7.2), or a combination of retroreflective sheeting and reflex reflectors that meet the requirements of FMVSS No. 108 (S5.7.3). The conspicuity system shall be installed and located as specified in FMVSS No. 108 [S5.7.1.4 (for retroreflective sheeting), S5.7.2.2 (for reflex reflectors), S5.7.3 (for a combination of sheeting and reflectors)] and have certification and markings as required by S5.7.1.5 (for retroreflective tape) and S5.7.2.3 (for reflex reflectors).
(c) Prohibition on the use of amber stop lamps and tail lamps. No commercial motor vehicle may be equipped with an amber stop lamp, a tail lamp, or other lamp which is optically combined with an amber stop lamp or tail lamp.

(d) Prohibition on the use of auxiliary lamps that supplement the identification lamps. No commercial motor vehicle may be equipped with lamps that are in a horizontal line with the required identification lamps unless those lamps are required by this regulation.

<table>
<thead>
<tr>
<th>Item on the vehicle</th>
<th>Quantity</th>
<th>Color</th>
<th>Location</th>
<th>Position</th>
<th>Height above the road surface in millimeters (mm) with English units in parenthesis measured from the center of the lamp at curb weight</th>
<th>Vehicles for which the devices are required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headlamps</td>
<td>2</td>
<td>White</td>
<td>Front</td>
<td>On the front at the same height, with an equal number at each side of the vertical center line as far apart as practicable.</td>
<td>Not less than 559 mm (22 inches) nor more than 1,372 mm (54 inches).</td>
<td>A, B, C</td>
</tr>
<tr>
<td>Turn signal (front). See footnotes #2 and 12.</td>
<td>2</td>
<td>Amber</td>
<td>At or near the front.</td>
<td>One on each side of the vertical centerline at the same height and as far apart as practicable.</td>
<td>Not less than 381 mm (15 inches) nor more than 2,108 mm (83 inches).</td>
<td>A, B, C</td>
</tr>
<tr>
<td>Identification</td>
<td>3</td>
<td>Amber</td>
<td>Front</td>
<td>As close as</td>
<td>All three on</td>
<td>B, C</td>
</tr>
<tr>
<td>Item on the vehicle</td>
<td>Quantity</td>
<td>Color</td>
<td>Location</td>
<td>Position</td>
<td>Height above the road surface in millimeters (mm) with English units in parenthesis measured from the center of the lamp at curb weight</td>
<td>Vehicles for which the devices are required</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>-------</td>
<td>----------</td>
<td>----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>lamps (front).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>practicable to the top of the vehicle, at the same height, and as close as practicable to the vertical centerline of the vehicle (or the vertical centerline of the cab where different from the centerline of the vehicle) with lamp centers spaced not less than 152 mm (6 inches) or more than 305 mm (12 inches) apart. Alternatively, the front lamps may be located as close as practicable to the top of the cab.</td>
<td>the same level as close as practicable to the top of the motor vehicle.</td>
</tr>
<tr>
<td>Tail lamps.</td>
<td>2</td>
<td>Red</td>
<td>Rear</td>
<td>One lamp on</td>
<td>Both on the</td>
<td>A, B, C,</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Item on the vehicle</th>
<th>Quantity</th>
<th>Color</th>
<th>Location</th>
<th>Position</th>
<th>Height above the road surface in millimeters (mm) with English units in parenthesis) measured from the center of the lamp at curb weight</th>
<th>Vehicles for which the devices are required</th>
</tr>
</thead>
<tbody>
<tr>
<td>See footnotes #5 and 11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>D, E, F, G, H</td>
</tr>
<tr>
<td>Stop lamps. See footnotes #5 and 13.</td>
<td>2</td>
<td>Red</td>
<td>Rear</td>
<td>One lamp on each side of the vertical centerline at the same height and as far apart as practicable.</td>
<td>Both on the same level between 381 mm (15 inches) and 1,829 mm (72 inches).</td>
<td>A, B, C, D, E, F, G</td>
</tr>
<tr>
<td>Clearance lamps. See footnotes #8, 9, 10, 15 &amp; 17.</td>
<td>2</td>
<td>Amber</td>
<td></td>
<td>One on each side of the front of the vehicle.</td>
<td>Both on the same level as high as practicable.</td>
<td>B, C, D, G, H</td>
</tr>
<tr>
<td>Reflex reflector, intermediate (side).</td>
<td>2</td>
<td>Amber</td>
<td></td>
<td>At or near the midpoint between the front and rear</td>
<td>Between 381 mm (15 inches) and 1,524 (60)</td>
<td>A, B, D, F, G</td>
</tr>
</tbody>
</table>
### Commercial Massachusetts Vehicle Check

<table>
<thead>
<tr>
<th>Item on the vehicle</th>
<th>Quantity</th>
<th>Color</th>
<th>Location</th>
<th>Position</th>
<th>Height above the road surface in millimeters (mm) with English units in parenthesis measured from the center of the lamp at curb weight</th>
<th>Vehicles for which the devices are required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflex reflector (rear). See footnotes #5, 6, and 8.</td>
<td>2</td>
<td>Red</td>
<td>Rear</td>
<td>One on each side of the vertical centerline, as far apart as practicable and at the same height.</td>
<td>Both on the same level, between 381 mm (15 inches) and 1,524 mm (60 inches).</td>
<td>A, B, C, D, E, F, G</td>
</tr>
<tr>
<td>Reflex reflector (rear side).</td>
<td>2</td>
<td>Red</td>
<td>One on each side (rear).</td>
<td>As far to the rear as practicable.</td>
<td>Both on the same level, between 381 mm (15 inches) and 1,524 mm (60 inches).</td>
<td>A, B, D, F, G</td>
</tr>
<tr>
<td>Reflex reflector (front side). See footnote #16.</td>
<td>2</td>
<td>Amber</td>
<td>One on each side (front).</td>
<td>As far to the front as practicable.</td>
<td>Between 381 mm (15 inches) and 1,524 mm (60 inches).</td>
<td>A, B, C, D, F, G</td>
</tr>
<tr>
<td>License plate lamp (rear). See footnote #11.</td>
<td>1</td>
<td>White</td>
<td>At rear license plate to illuminate the plate</td>
<td>No requirements</td>
<td></td>
<td>A, B, C, D, F, G</td>
</tr>
<tr>
<td>Item on the vehicle</td>
<td>Quantity</td>
<td>Color</td>
<td>Location</td>
<td>Position</td>
<td>Height above the road surface in millimeters (mm) with English units in parenthesis measured from the center of the lamp at curb weight</td>
<td>Vehicles for which the devices are required</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Side marker lamp (front). See footnote #16.</td>
<td>2</td>
<td>Amber</td>
<td>One on each side.</td>
<td>As far to the front as practicable.</td>
<td>Not less than 381 mm (15 inches).</td>
<td>A, B, C, D, F</td>
</tr>
<tr>
<td>Side marker lamp intermediate.</td>
<td>2</td>
<td>Amber</td>
<td>One on each side.</td>
<td>At or near the midpoint between the front and rear side marker lamps, if the length of the vehicle is more than 9,144 mm (30 feet).</td>
<td>Not less than 381 mm (15 inches).</td>
<td>A, B, D, F, G</td>
</tr>
<tr>
<td>Side marker lamp (rear). See footnotes #4 and 8.</td>
<td>2</td>
<td>Red</td>
<td>One on each side.</td>
<td>As far to the rear as practicable.</td>
<td>Not less than 381 mm (15 inches), and on the rear of trailers not more than 1,524 mm (60 inches).</td>
<td>A, B, D, F, G</td>
</tr>
<tr>
<td>Turn signal (rear). See footnotes #5 and 12.</td>
<td>2</td>
<td>Amber or red</td>
<td>Rear</td>
<td>One lamp on each side of the vertical centerline as far apart as practicable.</td>
<td>Both on the same level, between 381 mm (15 inches) and 2,108 mm (83 inches).</td>
<td>A, B, C, D, E, F, G</td>
</tr>
<tr>
<td>Item on the vehicle</td>
<td>Quantity</td>
<td>Color</td>
<td>Location</td>
<td>Position</td>
<td>Height above the road surface in millimeters (mm) with English units in parenthesis) measured from the center of the lamp at curb weight inches</td>
<td>Vehicles for which the devices are required</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>-------</td>
<td>----------</td>
<td>----------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Identification lamp (rear). See footnotes #3, 7, and 15.</td>
<td>3</td>
<td>Red</td>
<td>Rear</td>
<td>One as close as practicable to the vertical centerline. One on each side with lamp centers spaced not less than 152 mm (6 inches) or more than 305 mm (12 inches) apart.</td>
<td>All three on the same level as close as practicable to the top of the vehicle.</td>
<td>B, D, G</td>
</tr>
<tr>
<td>Vehicular hazard warning signal flasher lamps. See footnotes #5 and 12.</td>
<td>2</td>
<td>Amber</td>
<td>Front</td>
<td>One lamp on each side of the vertical centerline, as far apart as practicable.</td>
<td>Both on the same level, between 381 mm (15 inches) and 2,108 mm (83 inches).</td>
<td>A, B, C</td>
</tr>
<tr>
<td>Backup lamp. See footnote #14.</td>
<td>1 or 2</td>
<td>White</td>
<td>Rear</td>
<td>Rear</td>
<td>No requirement</td>
<td>A, B, C</td>
</tr>
</tbody>
</table>
## Item on the vehicle
### Quantity  | Color       | Location | Position                                                                 | Height above the road surface in millimeters (mm) with English units in parenthesis measured from the center of the lamp at curb weight | Vehicles for which the devices are required
---|---|---|---|---|---
Parking lamp | 2 | Amber or white | Front | One lamp on each side of the vertical centerline, as far apart as practicable. | Both on the same level, between 381 mm (15 inches) and 2,108 mm (83 inches). | A

**Legend: Types Of Commercial Motor Vehicles Shown In The Last Column Of Table 1.**

A. Buses and trucks less than 2,032 mm (80 inches) in overall width.

B. Buses and trucks 2,032 mm (80 inches) or more in overall width.

C. Truck tractors.

D. Semitrailers and full trailers 2,032 mm (80 inches) or more in overall width except converter dollies.

E. Converter dolly.

F. Semitrailers and full trailers less than 2,032 mm (80 inches) in overall width.
G. Pole trailers.

H. Projecting loads.

NOTE: Lamps and reflectors may be combined as permitted by §393.22 and S5.4 of 49 CFR 571.108, Equipment combinations.

Footnote-1: Identification lamps may be mounted on the vertical centerline of the cab where different from the centerline of the vehicle, except where the cab is not more than 42 inches wide at the front roofline, then a single lamp at the center of the cab shall be deemed to comply with the requirements for identification lamps. No part of the identification lamps or their mountings may extend below the top of the vehicle windshield.

Footnote-2: Unless the turn signals on the front are so constructed (double-faced) and located as to be visible to passing drivers, two turn signals are required on the rear of the truck tractor, one at each side as far apart as practicable.

Footnote-3: The identification lamps need not be visible or lighted if obscured by a vehicle in the same combination.

Footnote-4: Any semitrailer or full trailer manufactured on or after March 1, 1979, shall be equipped with rear side-marker lamps at a height of not less than 381 mm (15 inches), and on the rear of trailers not more than 1,524 mm (60 inches) above the road surface, as measured from the center of the lamp on the vehicle at curb weight.

Footnote-5: Each converter dolly, when towed singly by another vehicle and not as part of a full trailer, shall be equipped with one stop lamp, one tail lamp, and two reflectors (one on each side of the vertical centerline, as far apart as practicable) on the rear. Each converter dolly shall be equipped with rear turn signals and vehicular hazard
warning signal flasher lamps when towed singly by another vehicle and not as part of a full trailer, if the converter dolly obscures the turn signals at the rear of the towing vehicle.

**Footnote-6:** Pole trailers shall be equipped with two reflex reflectors on the rear, one on each side of the vertical centerline as far apart as practicable, to indicate the extreme width of the trailer.

**Footnote-7:** Pole trailers, when towed by motor vehicles with rear identification lamps meeting the requirements of §393.11 and mounted at a height greater than the load being transported on the pole trailer, are not required to have rear identification lamps.

**Footnote-8:** Pole trailers shall have on the rearmost support for the load: (1) two front clearance lamps, one on each side of the vehicle, both on the same level and as high as practicable to indicate the overall width of the pole trailer; (2) two rear clearance lamps, one on each side of the vehicle, both on the same level and as high as practicable to indicate the overall width of the pole trailer; (3) two rear side marker lamps, one on each side of the vehicle, both on the same level, not less than 375 mm (15 inches) above the road surface; (4) two rear reflex reflectors, one on each side, both on the same level, not less than 375 mm (15 inches) above the road surface to indicate maximum width of the pole trailer; and (5) one red reflector on each side of the rearmost support for the load. Lamps and reflectors may be combined as allowed in §393.22.

**Footnote-9:** Any motor vehicle transporting a load which extends more than 102 mm (4 inches) beyond the overall width of the motor vehicle shall be equipped with the following lamps in addition to other required lamps when operated during the hours when headlamps are required to be used.
1. The foremost edge of that portion of the load which projects beyond the side of the vehicle shall be marked (at its outermost extremity) with an amber lamp visible from the front and side.

2. The rearmost edge of that portion of the load which projects beyond the side of the vehicle shall be marked (at its outermost extremity) with a red lamp visible from the rear and side.

3. If the projecting load does not measure more than 914 mm (3 feet) from front to rear, it shall be marked with an amber lamp visible from the front, both sides, and rear, except that if the projection is located at or near the rear it shall be marked by a red lamp visible from front, side, and rear.

**Footnote-10**: Projections beyond rear of motor vehicles. Motor vehicles transporting loads which extend more than 1,219 mm (4 feet) beyond the rear of the motor vehicle, or which have tailboards or tailgates extending more than 1,219 mm (4 feet) beyond the body, shall have these projections marked as follows when the vehicle is operated during the hours when headlamps are required to be used:

1. On each side of the projecting load, one red side marker lamp, visible from the side, located so as to indicate maximum overhang.

2. On the rear of the projecting load, two red lamps, visible from the rear, one at each side; and two red reflectors visible from the rear, one at each side, located so as to indicate maximum width.

**Footnote-11**: To be illuminated when tractor headlamps are illuminated.

**Footnote-12**: Every bus, truck, and truck tractor shall be equipped with a signaling system that, in addition to signaling turning movements, shall have a switch or
combination of switches that will cause the two front turn signals and the two rear signals to flash simultaneously as a vehicular traffic signal warning, required by §392-22(a). The system shall be capable of flashing simultaneously with the ignition of the vehicle on or off.

Footnote-13: To be actuated upon application of service brakes.

Footnote-14: Backup lamp required to operate when bus, truck, or truck tractor is in reverse.

Footnote-15:

1. For the purposes of Section 393.11, the term "overall width" refers to the nominal design dimension of the widest part of the vehicle, exclusive of the signal lamps, marker lamps, outside rearview mirrors, flexible fender extensions, and mud flaps.

2. Clearance lamps may be mounted at a location other than on the front and rear if necessary to indicate the overall width of a vehicle, or for protection from damage during normal operation of the vehicle.

3. On a trailer, the front clearance lamps may be mounted at a height below the extreme height if mounting at the extreme height results in the lamps failing to mark the overall width of the trailer.

4. On a truck tractor, clearance lamps mounted on the cab may be located to indicate the width of the cab, rather than the width of the vehicle.

5. When the rear identification lamps are mounted at the extreme height of a vehicle, rear clearance lamps are not required to be located as close as practicable to the top of the vehicle.
Footnote-16: A trailer subject to this part that is less than 1829 mm (6 feet) in overall length, including the trailer tongue, need not be equipped with front side marker lamps and front side reflex reflectors.

Footnote-17: A boat trailer subject to this part whose overall width is 2032 mm (80 inches) or more need not be equipped with both front and rear clearance lamps provided an amber (front) and red (rear) clearance lamp is located at or near the midpoint on each side so as to indicate its extreme width.

Figure 1 – Truck Tractor Illustration for §393.11
Figure 2 - Straight Truck Illustration for §393.11
Figure 3 – Straight Truck Illustration for §393.11
Figure 4 – Straight Truck Illustration for §393.11
Figure 5 – Straight Truck Illustration for §393.11
Figure 6 – Straight Truck Illustration for §393.11
Figure 7 – Bus Illustration for §393.11

Legend For Figures 1 Through 7 – 49 CFR 393.11 Truck & Bus Vehicle Illustrations

Figure 8 – Semi-Trailer Illustration for §393.11
Figure 9 – Semi-Trailer Illustration for §393.11
Figure 10 – Semi-Trailer Illustration for §393.11
Figure 11 – Container Chassis Illustration for §393.11
Figure 12 – Pole Trailer Illustration for §393.11 – All Vehicle Widths
Figure 13 – Converter Dolly Illustration for §393.11
Figure 14 – Semi-Trailer Illustration for §393.11
Figure 15 – Semi-Trailer Illustration for §393.11

Figure 16 – Semi-Trailer Illustration for §393.11

Figure 17 – Semi-Trailer Illustration for §393.11

Figure 18 – Semi-Trailer Illustration for §393.11

Legend For Figures 8 Through 19 – 49 CFR 393.11 Trailer Illustrations
[53 FR 49385, Dec. 7, 1988; 70 FR 48027, Aug. 15, 2005]
Figure 3 - Straight Truck Illustration for § 393.11

Figure 4 - Straight Truck Illustration for § 393.11
Figure 7 - Bus Illustration for § 393.11
### LEGEND FOR FIGURES 1 THROUGH 7 - 49 CFR 393.11
**TRUCK & BUS VEHICLE ILLUSTRATIONS**
*(DOES NOT APPLY TO FIGURES 8 THROUGH 18 FOR TRAILERS)*

<table>
<thead>
<tr>
<th>Area</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Headlamps - Lower Beam</td>
</tr>
<tr>
<td></td>
<td>Headlamps - Upper Beam</td>
</tr>
<tr>
<td></td>
<td>Parking Lamps - Attention: Required only on vehicles less than 2032mm wide</td>
</tr>
<tr>
<td></td>
<td>Front Turn Signal/Hazard Warning Lamps</td>
</tr>
<tr>
<td>2</td>
<td>Front Clearance Lamps - Attention: Required for vehicles 2032mm wide or wider</td>
</tr>
<tr>
<td>3</td>
<td>Front Identification Lamps (ID)</td>
</tr>
<tr>
<td>4a</td>
<td>Front Side Marker Lamps</td>
</tr>
<tr>
<td>4b</td>
<td>Front Side Reflex Reflectors</td>
</tr>
<tr>
<td>5a</td>
<td>Rear Side Marker Lamps - Not required on Truck Tractors</td>
</tr>
<tr>
<td>5b</td>
<td>Rear Side Reflex Reflectors - Not required on Truck Tractors</td>
</tr>
<tr>
<td>6</td>
<td>Rear Clearance Lamps</td>
</tr>
<tr>
<td></td>
<td>Attention: Required for vehicles 2032mm wide or wider, but not required on Truck Tractors</td>
</tr>
<tr>
<td>7</td>
<td>Rear Identification Lamps (ID)</td>
</tr>
<tr>
<td></td>
<td>Attention: Required for vehicles 2032mm wide or wider, but not required on Truck Tractors</td>
</tr>
<tr>
<td>8</td>
<td>Tail Lamps</td>
</tr>
<tr>
<td></td>
<td>Stop Lamps</td>
</tr>
<tr>
<td></td>
<td>Rear Turn Signal/Hazard Warning Lamps</td>
</tr>
<tr>
<td></td>
<td>Rear Reflex Reflectors</td>
</tr>
<tr>
<td>9</td>
<td>Backup Lamp</td>
</tr>
<tr>
<td>10</td>
<td>License Plate Lamp</td>
</tr>
<tr>
<td>11</td>
<td>Center High Mounted Step Lamp</td>
</tr>
<tr>
<td></td>
<td>Attention: Required for vehicles less than 2032mm wide and 4539kg</td>
</tr>
</tbody>
</table>

**NOTE:** Semi-Trailer 9 To -11 Pictures Not Shown
Figure 11 - Container Chassis Illustration for § 393.11

Front

Rear

1 6

11

1 6

7 10
Figure 12 - Pole Trailer Illustration for § 393.11
- All Vehicle Widths

Front of Vehicle

Rear of Vehicle
(Including Truck Cab)
Figure 13 - Converter Dolly Illustration for § 393.11

Side View of Dolly

Rear

Figure 14 - Semi-Trailer Illustration for § 393.11

4a

3

4b

8

1

6

6

7

2

1

1

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Figure 15 - Semi-Trailer Illustration for § 393.11

Figure 16 - Semi-Trailer Illustration for § 393.11

Figure 17 - Semi-Trailer Illustration for § 393.11
Figure 18 - Semi-Trailer Illustration for § 393.11
### LEGEND FOR FIGURES 8 THROUGH 18 - 49 CFR 393.11

**TRAILER ILLUSTRATIONS**

*(DOES NOT APPLY TO FIGURES 1 THROUGH 7 FOR TRUCKS & BUSES)*

<table>
<thead>
<tr>
<th>Area</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tail Lamps</td>
</tr>
<tr>
<td>2</td>
<td>Stop Lamps</td>
</tr>
<tr>
<td>3</td>
<td>Rear Turn Signal Lamps</td>
</tr>
<tr>
<td>4</td>
<td>Rear Reflex Reflectors</td>
</tr>
<tr>
<td>5</td>
<td>License Plate Lamp(s)</td>
</tr>
<tr>
<td>6</td>
<td>Rear Side Marker Lamps</td>
</tr>
<tr>
<td>7</td>
<td>Rear Side Reflex Reflectors</td>
</tr>
<tr>
<td>8</td>
<td>Front Side Marker Lamps</td>
</tr>
<tr>
<td>9</td>
<td>Front Side Reflex Reflectors</td>
</tr>
</tbody>
</table>

### ADDITIONAL EQUIPMENT FOR TRAILERS EXCEEDING THE FOLLOWING PARAMETERS

**LENGTH 9.1 m (30 ft.) OR LONGER**

<table>
<thead>
<tr>
<th>Area</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Intermediate Side Marker Lamps</td>
</tr>
<tr>
<td>6</td>
<td>Intermediate Side Reflex Reflectors</td>
</tr>
</tbody>
</table>

**WIDTH 2.032 m (80 in.) OR WIDER**

<table>
<thead>
<tr>
<th>Area</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rear Clearance Lamps</td>
</tr>
<tr>
<td>2</td>
<td>Rear Identification Lamps</td>
</tr>
<tr>
<td>3</td>
<td>Front Clearance Lamps</td>
</tr>
</tbody>
</table>

**WIDTH 2.032 m (80 in.) OR WIDER AND GVWR 4,536 kg (10,000 lb.) OR MORE**

<table>
<thead>
<tr>
<th>Area</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rear Upper Body Marking</td>
</tr>
<tr>
<td>4</td>
<td>Bumper Bar Marking</td>
</tr>
<tr>
<td>6</td>
<td>Rear Lower Body Marking</td>
</tr>
<tr>
<td>9</td>
<td>Side Marking</td>
</tr>
</tbody>
</table>
Safe Loading

Pass Fail

Equipment:
None

Procedure:
Perform a visual inspection of applicable vehicles: Trucks, truck tractors, semi trailers, full trailers, and pole trailers.

NOTE: As per; 393.100: Each commercial vehicle, when transporting cargo on public roads, be loaded and “EQUIPPED”, and the cargo secured, in accordance with this subpart to prevent the cargo from leaking, spilling, blowing or falling from the motor vehicle.

Items To Inspect:
Loading components, Spare tire, and Front end structure (or equivalent).

Inspect And Reject For:

1. Part(s) of vehicle or condition of loading such as that spare tire or any part of the load or dunnage can fall into the roadway.

2. Protection against shifting cargo. Any vehicle without a front end structure or equivalent device as required.
### Chapter 3 – Safety Inspection

#### Steering Mechanism

<table>
<thead>
<tr>
<th>Component</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering Wheel Free Play</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering Column</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front Axle Beam and All Steering Components Other Than Column</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering Gear Box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pitman Arm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Steering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ball and Socket Joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tie Rods and Drag Links</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steering System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>King Pin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Equipment:

Jack of sufficient capacity to lift the front axle of the heaviest vehicle to be inspected, two jack stands; with a minimum rated capacity capable of holding the vehicle to be inspected, and a pry-bar and tape measure.

### Procedure:

Perform a visual inspection of all steering components. Some components will have to be worked (checking for movement,) which will require a second person.

### Items To Inspect:

Steering Wheel, Steering Column, Front Axle Beam, Steering Gear Box, Pitman Arm, Power Steering System, Ball and Socket Joints, Tire Rods and Drag Links, and King Pin.
Inspect For And Reject If:

1. **Steering Free Play**

   *NOTE: For vehicles equipped with power steering, the engine needs to be running. Measure the “free” amount of movement of the steering wheel to just when the tire (wheel) begins to move. Use the appropriate measurements below to determine maximum allowable movement.*

<table>
<thead>
<tr>
<th>Steering Wheel Diameter</th>
<th>Manual Steering System</th>
<th>Power Steering System</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>2&quot;</td>
<td>4 1/2&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>2 1/4&quot;</td>
<td>4 3/4&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>2 1/2&quot;</td>
<td>5 1/4&quot;</td>
</tr>
<tr>
<td>22&quot;</td>
<td>2 3/4&quot;</td>
<td>5 3/4&quot;</td>
</tr>
</tbody>
</table>
2. **Steering Column**

   **Inspect For And Reject If:**

   a. Any absence or looseness of U-bolt(s) or positioning part(s).
   
   b. Worn, faulty or obviously repair welded universal joint(s).
   
   c. Steering wheel not properly secured.

3. **Front Axle Beam and All Steering Components Other Than Steering Column**

   **Inspect For And Reject If:**

   a. Any crack(s) in gear box or mounting brackets.
   
   b. Any obvious weld or repair(s).

4. **Steering Gear Box**

   **Inspect For And Reject If:**

   a. Any mounting bolt loose or missing.
   
   b. Any crack(s) in gear box or mounting brackets.
c. Any fresh oil leak e.g.: input and output seal(s).

5. *Pitman Arm*

*Inspect For And Reject If:*

Any looseness of the Pitman Arm on the steering gear output shaft.

6. *Power Steering Systems*

*Inspect For And Reject If:*

a. Any components of the Power Steering System that is not in operating condition.

b. Any parts loose or broken.

c. Any belts frayed, cracked or slipping.

d. Any leak in the power steering system.

e. Lack of sufficient amount of fluid in the reservoir.

f. Auxiliary power assist cylinder loose.

7. *Ball and Socket Joints*

*Inspect For And Reject If:*

a. Any movement under steering load of a stud nut.
b. Any motion, other than rotational between any linkage member and its attachment point of more than 1/8 inch.

8. Tie Rods and Drag Links

*Inspect For And Reject If:*

a. Loose clamp(s) or clamp bolt(s) on Tie Rod or Drag Links.

b. Any looseness in any threaded joint.

c. Any nut(s) loose or missing on Tie Rods, Pitman Arm, Drag Link, Steering Arm or Tie Rod arm.

9. Steering System

*Inspect For And Reject If:*

Any modification or other condition that interferes with free movement of any steering component.

10. King Pin

*Kingpin Play Procedure:* Relative to vehicles equipped with Kingpins. MVMA recommended procedures as noted on the following page. Be sure wheel bearing movement is eliminated by applying service brake during checking procedure.
**Procedure:**

First eliminate all wheel bearing movement by applying service brake. With front end lifted, inspect wheel bearings, grasp the tire at the top and bottom and attempt to move in and out to detect looseness.

A pry bar is necessary on heavy wheels. Measure the movement at the top and bottom of the tire at the outer circumference.

**Inspect For And Reject If:**

The vehicle if measured movement at top or bottom of tire is greater than the distances described below:

**Wheel Size:**

<table>
<thead>
<tr>
<th>Wheel Size:</th>
<th>16 inches or less</th>
<th>1/4” (6.5mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheel Size:</td>
<td>17 to 18 inches</td>
<td>3/8” (9.5mm)</td>
</tr>
<tr>
<td>Wheel Size:</td>
<td>Over 18 inches</td>
<td>1/2” (13mm)</td>
</tr>
</tbody>
</table>
Chapter 3 – Safety Inspection
Suspension System

_Suspension_  
<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any U-bolt(s), spring hanger(s), or other axle position parts cracked, broken, loose, or missing resulting in shifting of an axle from its normal position.

_Spring Assembly_  
<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_Torque, Radius, or Tracking Components_  
<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_Shocks_  
<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_Equipment:_

A bottle jack to place between the spring and frame if excess wear is suspected of spring pins and related components, and a small hammer that can be used to tap u-bolts if they are suspected to be loose.

_Procedure:_

Perform a visual inspection of suspension system and if required to verify a problem, use tools at hand.

_Items To Inspect:_

Axles, Spring assembly, Torque, Radius, Tracking Components, and Shocks.

_Inspect For And Reject If:_

1. _Axles_

Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose, or missing resulting in shifting of an axle from its normal position.
NOTES:

- After a turn, lateral axle displacement is normal with some suspensions. Forward or rearward operation in a straight line will cause the axle to return to alignment.

- A worn spring pin is pictured below. The worn section in the middle is impossible to see because that portion is in a bushing within the spring or hanger. If you suspect a problem, use a bottle jack to check for excessive movement.

![Worn Spring Pin](image)

![Leaf Spring](image)

![Variable Load Suspension (Laden Position)](image)
Variable Load Suspension (Unladen Position)

Rubber Cushion Equalizing Beam
2. Spring Assembly

**Inspect For And Reject If:**

1. Any leaves in a leaf spring assembly cracked, broken or missing.

2. Any broken main leaf in a leaf spring assembly (includes assembly with more than one main spring).

3. Coil spring broken.

4. Rubber spring missing.

5. One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum or frame.

6. Broken torsion bar spring in a torsion bar suspension.

7. Deflated air suspension, i.e. system failure, leak, etc.

3. Torque, Radius, Swaybar or Tracking Components

**Inspect For And Reject If:**

a. Any part of a Torque, Radius, Swaybar or Tracking Component assembly or any part used for attaching the same to the vehicle frame or axle that is cracked, loose, broken or missing.

b. Any missing bushing for any Torque, Radius, Swaybar or Tracking Component.
Commercial

**NOTE:** This does not apply to loose bushings in Torque, Radius, Swaybar or Track Rods.

4. **Shocks**

Any broken, bent, missing shock absorbers or suspension springs.
Frame

<table>
<thead>
<tr>
<th>Frame Members</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire and Wheel Clearance</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Adjustable axle assemblies</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Bumpers</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Equipment:

None

Procedure:

Visually inspect all frame, frame related, bumpers and structural components.

Items To Inspect:

Frames, frame attaching components, bumpers and cross members on trailers.

Inspect For And Reject If:

1. Any cracked, broken, loose, or sagging frame member.

2. Any loose or missing fasteners including fasteners attaching functional component such as engine, transmission, steering gear, suspension, body parts, and fifth wheel.

3. Tire and wheel clearance. Any condition, including loading that causes the body or frame to be in contact with a tire or any part of the wheel assemblies.
4. Adjustable axle assemblies (Sliding Sub-frames) Adjustable axle assembly with locking pins missing or not engaged.

5. The existence of broken or bent bumpers, fenders, exterior sheet metal or moldings having sharp edges or abnormal protrusions extending beyond normal vehicle extremities so as to constitute a danger to pedestrians and other motor vehicle traffic. If the bumper face plates are removed, the bumper brackets must also be removed.
Chapter 3 – Safety Inspection

Tires

*Pass*  |  *Fail*
---|---
Any tire on any steering axle of a power unit.  |   |   |
All tires other than those found on the steering axle of a power unit.  |   |   |

**Equipment:**

A properly calibrated tire depth gauge.

**Procedure:**

Walk around vehicle and visually inspect all the tires. Do not forget to look between dual wheels for any side wall defects.

**Items To Inspect:**

Tires

**Inspect For And Reject If:**

1. *Steer Tires*

Any Steer Tire on any steering axle of a power unit.

a. With less than 4/32 inch tread when measured at any point on a major tread groove.

b. Has body ply or belt material exposed through the tread or sidewall.

c. Has any tread or sidewall separation.
d. Has a cut where the ply or belt material is exposed.

e. Is labeled “NOT FOR HIGHWAY USE” or displaying other markings which could exclude use on steering axle (except for farm vehicles, implements of husbandry, and off-road equipment is used on highway at restricted speeds).

f. A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word “radial” embossed in metal stems, or the word “radial” molded in rubber stems.

g. Mixing bias and radial tires on the same axle.

h. Tire flap protrudes through valve slot in rim and touches stem.

i. Re-grooved tires on buses, trucks and truck tractors, except for trucks and truck tractors equipped with front tires with a load carrying capacity of less than that of 8.25-20 8 ply-rating tires.

j. Boot, blowout patch, other ply repair or not properly inflated.

k. Weight carried exceeds tire load limit. This includes overloading tire resulting from low air pressure.

l. Tire is flat, has noticeable (e.g., can be heard or felt) leak or not properly inflated.

m. Any bus equipped with recapped or re-treaded tire(s).
n. So mounted or inflated that it comes in contact with any part of the vehicle.

o. Tire size must be the same on each side of the front and/or rear axle. Tire size may be different between front and rear axles as determined by vehicle manufacturer.

2. *All Other Tires*

*Inspect For And Reject If:*

All tires other than those found on the steering axle of a power unit and trailers.

a. With less that 2/32 inch tread when measured at any point on a major tread groove.

b. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low pressure.

c. Tire flat, has noticeable (e.g., can be heard or felt) leak not properly inflated.

d. Has body ply or belt material exposed through the tread or sidewall.

e. Has any tread or sidewall separation.

f. Has a cut where ply or belt material is exposed.

g. So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate).
Commercial

h. Is labeled “NOT FOR HIGHWAY USE” or displaying other markings which would exclude use on steering axle (except for farm vehicles, implements of husbandry, and if off-road equipment is used on highway at restricted speeds).

i. Tire size must be the same on each side of the front and/or rear axle.

NOTE: Tire size may be different between front and rear axles as determined by vehicle manufacturer.
Chapter 3 – Safety Inspection
Wheels and Rims

<table>
<thead>
<tr>
<th>Equipment:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedure:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk around vehicle and visually inspect all wheels.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items To Inspect:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All wheels, rims, fasteners, locking rings or side rings. Do not forget to look between duals.</td>
<td></td>
</tr>
</tbody>
</table>

**WARNING:** Be aware of any locking ring type of rims that are not properly secured. Safety always takes priority.

Inspect For And Reject If:

1. **Lock or Side Rings**

   Bent, broken, cracked, improperly seated, sprung or mismatched ring(s).
2. *Wheels and Rims*

Cracked or broken or has elongated bolt holes.

3. *Fasteners (both spoke and disc wheels)*

Any loose, missing, broken, cracked, stripped or otherwise ineffective fasteners.

4. *Welds*

a. Any cracks in welds attaching wheel disc to rim.

b. Any cracks in welds attaching tubeless demountable rim to adapter.

c. Any weld repair on aluminum wheel(s) on a steering axle.

d. Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the steering axle.
Windshield Glazing

<table>
<thead>
<tr>
<th>Windshield Glazing</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Windshield Critical Viewing Area</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Windshield Defects</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Window, Tinting</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Equipment:
Registry of Motor Vehicles approved tint meter.

Procedure:
Visually inspect the “Windshield Critical Viewing Area.” This is the area covered by the sweep of the wiper(s) exclusive of the outer 2 inches within the perimeter of the wiper(s) sweep, provided by the vehicle manufacturer.

Critical Viewing Area:

Windshield Critical Viewing Area is the area covered by the sweep of the wiper(s) exclusive of the outer 2 inches within the perimeter of the wiper(s) sweep, provided by the vehicle manufacturer.

Inspect For And Reject If:
The vehicle will be rejected if any original glazing (glass) is not in place or if there are any deficiencies in the windshield’s critical viewing area.
Inspect For And Reject If:

Windshields having any of the following defects:

1. Any broken glass with sharp jagged edges inside or outside.

2. Any stone Bruise, star break, or bulls eye, damage in excess of 1 inch in diameter within the critical viewing area or larger than 2 inches outside the critical of your viewing area, or multiple such damage.

3. Single-line cracks which extend more than 3 inches into the critical viewing area.

4. Multiple cracks, having one or more which extends into the critical viewing area.

5. Wiper scrape(s) in excess of 1/4 inch wide within the critical viewing area.

6. Clouding extending more than 3 inches within the perimeter of the exposed glass.

7. No poster, sticker decal, etc. must be attached to the windshield in such a manner as to obstruct the vision of the operator.

8. Any tinting or reflective material applied by brush, spray, or adhesive which is below the uppermost 6 inches or AS-1 line of the windshield.
Window And Window Tint:

A. Rear Window:

The vehicle will be rejected if there is an obstructed view to the rear, unless the vehicle is equipped with two outside rear view mirrors.

B. Window Tint:

The vehicle will be rejected if the windshield is tinted beyond AS-1 line usually located in the uppermost six inches of the windshield. If the windows immediately adjacent to the operator and front passenger seat, the windows immediately to the rear of the operator and front passenger seat; and the rear window have been tinted beyond the acceptable standards (49 code of Federal Regulations part 571.205). Aftermarket tinting to the rear window is only allowed for vehicles with two outside mirrors. Tint meter reading less than thirty five percent is not acceptable (see Appendix D).

540 CMR 4.04(8)(f) Window Tinting Shall Not Apply To The Following:

1. All window tinting as provided by the original manufacturer that is in compliance with applicable Federal Motor Vehicle Safety Standards.

2. Authorized vehicles used to transport K-9 teams.

3. Vehicles registered out of state.

4. Vehicles for which a medical exemption has been issued by the Registry of Motor Vehicles (RMV).

5. All windows to the rear of the operator's seat on vehicles used for public livery, except taxicabs.
6. Any vehicle registered to the federal, state, or local law enforcement agencies.

7. Vehicles registered to watch guard or patrol agencies licensed under the provisions of section 20 of Chapter 147 or section 63 of Chapter 122.

**Inspect For And Reject If:**

**A. Windshields having any of the following defects.**

1. Any broken glass with sharp or jagged edges inside or outside.

2. Any stone bruise, star break, or bulls eye, damage in excess of one inch in diameter within the critical viewing area or larger than two inches outside the critical viewing areas, or multiple such damage.

3. Single line cracks which extend more than three inches into the critical viewing area.

4. Multiple cracks, having one or more which extends into the critical viewing area.

5. Wiper scrape(s) in excess of 1/4 inch wide within the critical viewing area.

6. Clouding extending more than three inches within the perimeter of the exposed glass.

7. No poster, sticker decal, etc. must be attached to the windshield in such manner so as to obstruct the vision of the operator.

8. Any tinting or reflective material applied by brush, spray, or adhesive which is below the uppermost six inches of the windshield or which may encroach upon the
driver’s direct forward viewing area. (All such tinting provided by the original manufacturer in compliance with applicable Federal Motor Vehicle Safety Standard is acceptable).

NOTE: About Window Tinting - Aftermarket tinting or alterations that do not change the transparency beyond that of the standards set forth in 49 Code of the Federal Regulations Part 571.205 is acceptable on windows immediately adjacent to the operator and front passenger seat and the windows immediately to the rear of the operator and front passenger seat. The rear window may also be tinted provided the vehicle is equipped with two outside rear view mirrors. The windshield may only be tinted down to the AS-I line usually located in the uppermost six inches of the windshield.

B. 540 CMR 4.04(8)(f) shall not apply to the following:

1. All window tinting as provided by the original manufacturer that is compliance with applicable Federal Motor Vehicle Safety Standard.

2. Authorized vehicles used to transport K-9 teams.

3. Vehicle registered out of state.

4. Authorized vehicles for which a medical exemption has been issued by the Registry of Motor Vehicles.

5. All windows to the rear of the operator’s seat on vehicles used for public livery, except taxicabs.
Chapter 3 – Safety Inspection

Windshield Wipers

**Windshield Wipers**

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Any power unit that has an inoperative wiper, or missing or damaged parts that render it ineffective.

Test for proper operation.

Windshield cleaner equipment.

**Equipment:**

None

**Procedure:**

Visually check wiper and washer system.

**Items To Inspect:**

Wiper blades

**Inspect For And Reject If:**

1. Windshield wipers on any power unit are inoperative, missing, or have damaged parts that render it ineffective.

2. Wipers do not properly operate, or if the vehicle was equipped with two wipers as furnished by the manufacturer that are not maintained in good working order.
   
   a. Wiper blades not properly contacting windshield.

   b. Wiper blades that are not the same length as those furnished as original equipment.
c. Rubber elements damaged or torn.

3. Equipped, the windshield cleaner equipment is not maintained in good working order.
Chapter 3 – Safety Inspection

Seat Belts

Seat Belt Check

Seat belts

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
</table>

Equipment:
None

Procedure:
The inspector tests all the seatbelts for proper operation. Motorized seatbelts must move and secure in the locked (driving) position.

NOTE: It is the responsibility of the operator of the vehicle to make all seat belts available for inspection.

Items To Inspect:

Seat Belts, Seat Belt Retractors, buckles and anchorages.

Inspect For And Reject If:

a. Seatbelts

1. There are no seatbelts (unless the vehicle is manufactured before July 1st, 1966) or they work improperly in any way.

2. Safety belt webbing is frayed, split or torn.
3. Belt buckles or retractor do not operate properly.

4. Belt anchorages are loose, badly corroded, missing or not fastened to belt.

5. Belt mounting surfaces are badly deformed, damaged or corroded.
Chapter 3 – Safety Inspection

Air Bags

Airbag Check

<table>
<thead>
<tr>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
</table>

Equipment:
Indicator lamp / light

Procedure:
The inspector will need to locate and identify the airbag lamp on the dashboard and the locations of the airbags.

Items to Inspect:
Airbag malfunction indicator lamp and Airbags.

Inspect For And Reject If:

a. Airbags

The vehicle has an airbag deployed or removed.

b. Airbag Lamp

The vehicle has the Airbag lamp not operating as designed or if there is an indication of a malfunction (Airbag light illuminated with the engine running) in the Airbag system.
Chapter 4 – Program Basics

Workstation Operation and Maintenance

Equipment Installation

The MA Vehicle Check Workstation is designed for installation by inspection facility personnel. Installation instructions are included with each Workstation. When your unit arrives, please unpack it carefully and make sure the package contents match the packing list.

You will be instructed to connect several cables to the back of the Workstation computer.

Individual cable connections are shown here and outlined with instructions supplied with Workstation.
Equipment Installation

**Individual Cable Connections And Components Are Shown Below.**

![Individual Cable Connections Diagram](image)

**Install A Floppy Disk**

Make sure the 3.5 inch floppy disk included in the equipment package is inserted into the floppy drive.

The floppy disk must remain in the floppy drive at all times. It should never be removed or discarded. Once testing begins, the floppy acts as a data backup for any files that have not yet been transmitted over the phone lines to the Vehicle Inspection Database (VID).
NOTE: The Vehicle Inspection Database is the main computer at the RMV, where all test data records are stored. Inspection test results are transmitted to the VID from the internet connection.

**Turn On The PC**

**CAUTION!**
Before turning on the Personal Computer (PC), make sure it is plugged into a grounded power receptacle and that the PC modem is connected to an internet connection.

Turn on the PC by pressing the power ON/OFF button located on the front lower right corner of the PC.

If the green ON light does not illuminate, check the PC connection to the power supply.

**Power On Self-Test Display**

The system should self-test each time it powers up and will display the hardware check list shown to the right.

This is the Hardware Test Screen displayed after the computer powers up. If any of the first three components (scan tool, bar code reader, or floppy drive) fail, you will not be able to continue.
If this happens, check any failed component’s cable connection(s) for looseness or damage. Then, press ENTER to repeat the diagnostic test. The computer will test the connections again and provide new test results on the screen. If any of the three critical tests continues to fail, call the MA Vehicle Check Help Desk Hotline at 877-834-4677 for assistance.

**SAFETY WARNINGS**

Keep all liquids away from the Workstation. Liquids spilled on the computer, monitor, keyboard, bar code scanner or scan tool can damage the components. Spilled liquids around the electrical components can also result in serious electrical shock and operator injury.

Make sure that all Workstation components are connected to a properly grounded wall outlet at all times. Do not operate the Workstation during an electrical storm. Do not connect Workstation to any vehicle when work is being performed on the vehicle, such as welding or battery charging.

**Equipment Care**

Other than periodic cleaning, the Workstation requires no maintenance.
**CAUTION!**

**Do not** pour cleaning liquid of any kind on any of the equipment. Clean away dirt by wiping equipment with a cleaning cloth dampened with a mild detergent solution or general purpose cleaner. **Do not** use harsh, caustic, or petroleum-based cleaners.

**CAUTION!**

**Do not** remove the Workstation computer housing for any reason. Removing the cover for any reason voids the equipment warranty.

**Cleaning The Bar Code Scanner**

Improper scanner operation can be caused by a dirty scanner window. If the scanner is not working properly, dampen a clean, soft cloth or facial tissue with a mild cleaning solution, and wipe the window clean.

If a mild detergent is used, wipe the detergent film away with a cloth dampened with water only. Then, dry the scanner window with a clean, soft, dry cloth.

**CAUTION!**

Never submerge the scanner in water or cleaning solution. Don’t use solvents such as alcohol, acetone, brake cleaner, or carburetor cleaner. Clean only with a soft, non-abrasive cloth. An abrasive cloth may scratch the scanner window, affecting scanner performance.
Troubleshooting The Bar Code Scanner

Here are things to check if the bar code scanner isn’t working properly:

- Is the power on? Is the red beam visible when the scanner trigger is pressed? Do not shine the light directly into anyone’s eyes.
- If the light is not visible, make sure the scanner power supply is connected.
- Is the cable connected properly?
- Check the scanner image in the upper right corner of the computer screen. If the scanner image is red, the connection between the scanner and computer is open.
- Check the scanner window. Is it dirty or scratched?
- If the connection and power supply are both good, but the scanner still doesn’t work, call the MA Vehicle Check Help Desk Hotline at 877-834-4677.

The OBD II Scan Tool Module

The OBD II scan tool module is self-contained. Clean the scan tool module with a mild detergent cleaning solution or general purpose cleaner. Scanner cables may also be cleaned with a clean cloth, dampened with mild detergent.

Inspect the OBD II scan tool for damage regularly, especially the cables and connections. Perform a visual check of the pin connections in the Workstation scan tool module cable end, as described in the Workstation Operator’s Manual.
Look for frayed or damaged cable insulation. Replace any cables that are damaged. Replacement cables are available from the MA Vehicle Check Help Desk Hotline at 877-834-4677.

**Troubleshooting The OBD II Scan Tool Module**

The OBD II scan tool module contains one green colored LED. The **Power LED** should light a steady **GREEN** color.

**Troubleshooting The Printer**

Here are things to check if the printer isn’t working properly:

- Is the power cord connected?
- Are both the computer and printer turned on?
- Is the USB (Universal Serial Bus) cable between the printer and the computer disconnected or damaged?
- Did you remove the transparent tape from the ink cartridges before installing them?
- Check that paper is properly loaded into the paper.
- Are there any blinking lights on the printer? Blinking lights indicate a problem.
For more detailed information about how to read and interpret printer error messages, see the Workstation Operator’s Manual.

**The Internet Connection**

Your internet CAT 5 RJ 45 cable (high speed internet) or phone line (dial-up internet) is your inspection station’s data transmission link to the Vehicle Inspection Database (VID). Route the internet CAT 5 RJ 45 cable or phone line to the PC in a protected manner so it can’t be snagged or stepped on. Keep the cable clean and dry, and inspect it periodically for damage.

A damaged internet CAT 5 RJ 45 cable or phone line, connector or a poor connection will affect your ability to perform inspections, even if all other inspection station components are working properly.
Public Relations

Good public relations is one of the most important functions in implementing emission and safety inspection programs. The Commonwealth of Massachusetts’ regulations mandate that motorists have an annual emission and safety inspection performed on their vehicles.

It is important for motorists to be well informed about the inspection process. When there are changes to the program, analyzer messages and educational materials are distributed to keep inspectors informed and to help them answer questions from the public.

Elements Of Good Public Relations

The responsibilities of good public relations and of providing the public with information and services extends to all who are involved in the program: Agencies, Contractors, and the Industry.

The following lists some of the elements required for implementing a successful public relations campaign:

1. Public Education. Informing the public of the problem, the solutions and reasons for implementing a specific solution.
2. Involving the public in the decision making process. This is accomplished by holding public hearings, listening to motorists’ comments, etc., prior to implementation of programs or changing requirements.
3. Open Communications. Keeping the public informed and providing them with updates on the program.
4. **Public Accessibility.** Giving the motorists access to information and support systems relating to the program.

5. **Public Convenience.** This is one of the most important elements for successful implementation of I/M programs. There must be enough inspection facilities to accommodate all regulated vehicles with minimum wait times.

6. **Good Customer Service.** The responsibility of providing good customer service lies with the industry who provides the testing services in the Commonwealth.

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**Good Customer Service**

One essential part of providing good service is the provider’s knowledge of his or her product or service. In other words: *Employee Education.* For most people, a vehicle is a major investment, second only to buying a house. Motorists would like to be sure that whoever is handling their vehicle is a trained professional that knows what he or she is doing. The only way an inspector can become a professional is through education and application. This means learning all aspects of the job and applying what is learned to his or her work. The best way to provide good customer service in an inspection program is to provide the motorist with courteous, fair, accurate, complete, and safe inspection of their vehicle.

Remember: working together as a team, the Massachusetts’ Department of Environmental Protection (DEP), Massachusetts’ Registry of Motor Vehicles’ (RMV) Vehicle Check Team, and the industry (represented by you - the inspectors, shop owners, and managers) can provide the motorists with good overall service to help ensure continued success of the Massachusetts Vehicle Check program.
Commercial

Hotline

To ensure motorists’ specific questions, complaints, and general concerns about the motor vehicle inspection program are addressed, a “Hotline” (telephone) service will receive and resolve such issues regarding any activities of the program, including registration, suspension, and reinstatement rules and procedures.

Customer Service Representatives (CSRs) will coordinate, track, and manage problem resolution. The hotline will consist of properly trained CSRs, to handle calls. All CSRs will be trained on the program and will be knowledgeable of all support documentation and support channels to properly and efficiently assist the motorists.

CSRs will respond to and resolve motorist and station general questions and concerns regarding the program, and provide the resources and personnel necessary to ensure prompt and accurate responses and resolution of questions and concerns.

Motorist Hotline operating hours:

- Monday, 7 a.m. to 5 p.m.
- Tuesday, 7 a.m. to 8 p.m.
- Wednesday, 7 a.m. to 5 p.m.
- Thursday, 7 a.m. to 8 p.m.
- Friday, 7 a.m. to 5 p.m.
- Saturday, 7 a.m. to 5 p.m.

Station Hotline operating hours:

- Monday to Saturday, 7 a.m. to 5 p.m.
Hotline hours exclude New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. For calls outside of normal business hours, customers can leave a message and will receive a return call. Customer service representatives will provide information for all types of motor vehicle inspections and registration, including status, suspension, and reinstatement rules and procedures.

Registered Repair Stations (RRS) will be encouraged to call the hotline with specific repair related issues. The CSR will open a ticket to document the issue. The CSR will contact the Motorist Assistance Center (MAC) L-1 Tech closest to the location of the RRS and forward the call details for resolution. The MAC L-1 Tech will return the Registered Repair Tech’s call to assist in the resolution of the issue. Upon resolution, the MAC L-1 Tech will summarize the resolution and the ticket will be updated and closed accordingly.

As an inspector, it is your responsibility to inform motorists of their “potential” eligibility for certain options such as: Repair Extensions, Emission Waivers, etc. Do not attempt to cite the eligibility requirements of available options to motorists by memory or to guarantee eligibility for any option. Instead, present the material provided by the Massachusetts Vehicle Check program, which describes the requirements for the options, and advise the motorist to call the 866-941-6277 (866-941-MASS) hotline for questions and locations of MACs.
Website

Program updates and changes will be available on the Massachusetts Vehicle Check website at: http://www.mass.gov/vehiclecheck. This website is designed to provide basic program information to motorists, the general public, inspectors, and repair technicians. It provides specific information to inspectors and repair technicians, and will also provide the public and industry with ready access to program regulations, reports, information on program changes and new components, and other information deemed useful.

Frequent visits to the website are recommended for review of updates and changes. The Commonwealth works diligently to ensure that inspection stations and inspectors are informed of changes and updates to the program, but the responsibility remains that of station owners, managers, and inspectors to ensure they are up-to-date on all changes.
Your Workstation is configured to allow the ordering of Test Authorizations.

Station Management Menu

1. Purchase Test Authorizations (acquire required password)
2. Review Test Authorization Inventory
3. Data File Refresh
4. Sticker Management
   a. Add Stickers To Inventory
   b. Report Damaged/Stolen Stickers
   c. Sticker Inventory Report
   d. End Of Year Sticker Inventory Report
5. Change Password
6. Equipment Maintenance
7. Update Software From CD
8. Internet Access Setup
9. View Station Information
   a. Workstation Initialization/Station Out Of Business
0. Return to Main Menu
Station Management Menu – (1) Purchase Test Authorizations

Upon entering the menu, the Workstation screen displays: “There are currently <<#>> test authorizations available.” Then, the screen will display an entry field with the prompt: “Enter the number of test authorization books to order. Each book contains 25 test authorizations.” Only number entries are allowed. The screen also displays: “Press <ENTER> to continue. Press <ESC> to cancel.” If <ESC> is pressed, the screen returns to the Station Menu. If no value is entered and <ENTER> is pressed, the screen will display: “Enter the number of test authorization books to order. Press <ENTER> to continue.” The Workstation then returns to the test authorization order screen. If a value greater than 25 is entered, the screen displays: “You can order a maximum of 25 books. Press <ENTER> to continue.” The Workstation then returns to the test authorization order screen and the number of books ordered changes to 25. If <ENTER> is pressed, the screen displays: “625 total authorizations will be ordered and the applicable funds will be debited from this station’s account. Press OK to continue this purchase.” There is an option for <OK> or <Cancel>. If <Cancel> is selected, the Workstation returns to the test authorization order screen.

If <OK> is pressed, the Workstation initiates a connection to the VID. The Workstation makes the network connection, and waits for a response from the VID. If, after 30 seconds, the Workstation does not receive a response from the VID, the Workstation retries the connection. Two attempts to connect to the VID are made. If the VID connection is successful, the Workstation screen will display the information returned by the VID: “## test authorizations have been purchased. A total of $$$ has been debited from this station’s account. The order reference number is #####. Press <ENTER> to continue or <P> to print.” If you press <P> a copy of the screen prints. After <ENTER> is pressed, the Workstation returns to the Station Menu.
Purchase Test Authorizations – Error Messages

If the VID access was not successful, a message indicating that will display on the screen. If the VID returns an error code (e.g., insufficient funds to complete the transaction), a message indicating the reason will display on the screen.

Station Management Menu – (2) Review Test Authorization Inventory

You will be prompted to select a time period for the test authorization inventory / usage report, and press <ENTER>. The defaults will be the current system date, less than 30 days to the current date. The Workstation screen displays entry fields for the following: “Press <ENTER> to continue. Press <ESC> to cancel;” “Start Date in MM-DD-YYYY format;” and “End Date in MM-DD-YYYY format.” You can display results of the Test Authorization usage report on the screen or to print the report by pressing <P>.

Review Test Authorization Inventory – Error Messages

If an invalid date is entered, the Workstation screen displays: “Not a valid date. Please enter a date in MM-DD-YYYY format. Press <ENTER> to continue.” It will then return to the data entry field. If there is no data between the dates selected, the screen will display: “There is no data to be printed. Press <ENTER> to continue.” It will then return to the start date entry field.
Station Management Menu – (4) Sticker

Stickers will be sent to the inspection station and must be entered into the inspection terminal with the lowest numbered stickers to be used first. When this menu option is selected, the Workstation screen will display the Sticker Management Menu with the following options:

1. Add Stickers to Inventory
2. Report Damaged or Stolen Stickers
3. Sticker Inventory Report
4. End of Year Sticker Inventory Report
0. Return to the Station Management Menu

At this point in the process, stickers (authorizations) are assigned to a station, but not a specific Workstation. Station owner/operators must enter stickers into the Workstation before assigning a sticker to a vehicle.

When stickers are received by the station, inspectors will enter them into the Workstation inventory. In the event that certificates are entered into the inventory that expire in different years (e.g. 2009 and 2010), the Workstation only allows the 2009 certificates to be issued from January 1, 2008 to December 31, 2008 and it only allows the 2010 certificates to be issued from January 1, 2009 to December 31, 2009, and so on for every year.
Add Stickers To Inventory

When this menu item is selected, the Workstation contacts the VID to obtain the latest list of stickers that have been sent to the station but not yet loaded into a specific Workstation. The Workstation screen displays: “PERFORMING NETWORK ACCESS, PLEASE WAIT”. The Workstation makes the network connection and waits for a response from the VID. If after 30 seconds the Workstation does not receive a response from the VID, the Workstation will retry. The communications software makes two attempts to connect to the VID. If the VID connection was not successful, a message indicating the reason displays on the Workstation screen.

If the VID connection was successful, the screen displays the list of sticker books that have been registered in the VID as issued to the station, but not yet loaded into inventory for a specific Workstation. If a station has multiple books of stickers available to load, the Workstation requires the inspector to load the books of stickers in numerical order from lowest to highest. In order to complete the addition of stickers to inventory, the inspector will be prompted to scan the bar code on the outside wrapper of the sticker book. After scanning the correct sticker books, the screen displays a message that reads: “The Inspection Certificate book(s) you have selected have been entered into your inventory.” If the bar code scanned is not the correct bar code for the expected book of stickers, the screen displays: “The scanned bar code is not correct. Please scan the bar code for the stickers <<sticker numbers>>. Press <ENTER> to retry or <ESC> to cancel.” If <ENTER> is pressed, the screen will prompt the inspector to scan the bar code for the sticker book to be loaded. If <ESC> is selected, the Workstation returns to the previous menu; the inspector must either scan the appropriate book of stickers or report the expected book as voided, damaged, or stolen.
Report Damaged Or Stolen Stickers

Voided Sticker Policy

Place voided stickers in an envelope, clearly writing on the envelope the starting date and ending date of the sticker series, and also writing the beginning serial number and ending serial number of the pack of stickers. The voided stickers must be kept neatly in the envelope in numerical order, in a secure location. Each time an inspection sticker is damaged or voided, be sure to write VOID across the front of the sticker. Place all voided or damaged stickers in the appropriate envelope that matches the serial numbered sequence from the appropriate pack. RMV Field Investigators will pick up all envelopes of voided stickers when performing station audits.

When this option is selected, the owner / operator is prompted to answer: “Is the sticker stolen (S) or Damaged (D), or Voided Due to End of Year Overstock (O)?” The user is then prompted with choices: Please select stickers: By individual number; By book; Perform an inventory of remaining stickers; Return to Sticker Management Menu.

If the user selects #1: “By individual number” they are prompted with: “Please enter the sticker number.” The system accepts a keyboard entry, as long as the number provided has not been previously assigned during an inspection / re-inspection. After the sticker number is accepted, the Workstation asks whether the date the sticker was voided / damaged / stolen (default to system date). If stolen, indicate whether the theft has been reported to the police (Y/N) and if a police incident report is available (Y/N).
If the user selects “#2: “By book/type”, the screen will display a list of each “book,” including partial books, of stickers in inventory and will ask for a selection (X), which books should be identified as voided, damaged or stolen. A (partial) list will be displayed:

2009 Stickers
- Partial Book 23456789-23456800
- Full Book 23456801-23456840
- Full Book 23456841-23456880

The user will be able to select as many partial or full books as needed, and the screen will prompt for <Enter> when the selection is completed. After <Enter> has been selected, the system returns selected partial / full sticker books, counts the number of stolen / damaged / voided stickers, and prompts the user to enter additional information: the date the stickers were voided / damaged / stolen (default to system date); if stolen, whether the theft has been reported to the police (Y/N); and, if stolen, whether a police incidence report is available (Y/N). Additionally, it will display: “Please confirm you are removing (count) stickers from inventory (Y/N).”

If the user selects “#3: “Perform an inventory of existing stickers,” they are provided with a list of each individual sticker in inventory by type of sticker and asked to select (X) which items remain in inventory. A (partial) list displays as follows:

2009 Stickers
- 23456789
- 23456790
- 23456791
- 23456792
- 23456793
- 23456794
- 23456795
- 23456796
The user is prompted to press `<Enter>` when the selection is completed. After they have selected `<Enter>`, the system returns only sticker numbers not selected, counts the number of missing stickers, and prompts the user to enter additional information as follows: the date the stickers were voided / damaged / stolen; if stolen, whether the theft has been reported to the police (Y/N); and if stolen, whether a police incidence report is available (Y/N). After the above information has been entered, they will be prompted with: “Please confirm you are removing (count) stickers from inventory (Y/N).”

*Sticker Inventory Report*

The station will be prompted to select a time period for the sticker inventory / usage report, and press `<Enter>`. The defaults will be the current system date, less 30 days to the current date. The user will have the option to display results of the sticker usage report on the screen and then print the report by pressing “<P>”.

For each sticker issued, the report displays sticker #, date issued, plate type, plate #, year, make, model, and VIN. At the end of the table of stickers issued, the report lists the number of stickers remaining in inventory. The report indicates any stickers that have been reported voided, Voided Due to End of Year Overstock, Damaged, or Stolen and the date each was reported. The report includes totals for the following: Stickers Issued, Voided, Voided Due to End of Year Overstock, Damaged, or Stolen.
End Of Year Sticker Inventory Report

The End of Year Sticker Inventory Report is available for display with the option to print at the beginning of each calendar year and reports on the stickers for the previous calendar year. The report remains available to view or print until the following calendar year when a new End of Year Inventory Report becomes available. The report contains the number (beginning and ending) and quantity of sticker book(s) partial and or full entered into inventory, but not issued by the Workstation. It indicates the number (beginning and ending) and quantity of sticker book(s) that were available to load but were not loaded in the Workstation. The totals for Stickers Issued, Damaged, Stolen, Voided, and Voided Due to End of Year Overstock are included on the report. The report is for the end of the previous year and is only calculated as of 12:00am (midnight) on December 31st each year.
Chapter 5 – Opacity Testing
Diesel Emissions Overview

In order to reduce harmful emissions from diesel vehicles the Environmental Protection Agency (EPA), under the authority of the Clean Air Act, has regulated the quality of diesel fuel and pollutant emission levels from new engines. To ensure that heavy-duty diesel vehicles are maintained over time and to identify gross polluters, many states have implemented emission testing for diesel engines. The emission test that is used on diesel vehicles is commonly known as the smoke opacity test. Opacity testing checks the diesel engine for excessive unburned fuel (hydrocarbons) that are emitted as soot particles. The darker the smoke, the more the engine is polluting and the higher its opacity reading will be.

Reducing smoke from diesel cars, trucks and buses is an important step toward cleaning the air in Commonwealth of Massachusetts. Annual emissions testing of diesel vehicles will ensure that diesel owners share responsibility with gasoline vehicle owners for improving the air we all breathe.

One-third of the air pollution generated by motor vehicles comes from diesel-fueled cars, trucks and buses. This pollution consists of small particles found in diesel smoke, which are considered to be health hazards, particularly for children and the elderly. Increased lung disease and asthma rates have been associated with diesel pollution. The U.S. Environmental Protection Agency (EPA) has concluded that long-term exposure to diesel exhaust is likely to increase the probability of developing cancer.
Chapter 5 – Opacity Testing
Vehicles To Be Tested

NOTE: Opacity testing will not begin until April of 2009 and will most likely include additional training.

Effective beginning October 1, 2008, the following motor vehicles are exempt from the emissions inspection:

- Any diesel vehicle with a model year earlier than 1984;
- Any light duty diesel vehicle with a model year earlier than 1997 or 15 or more model years old;
- Any medium duty diesel vehicle with a GVWR of not more than 10,000 pounds and with a model year earlier than 2007 or 15 or more model years old;
- Any light duty non-diesel vehicle with a model year earlier than 1996 or 15 or more model years old;
- Any medium duty non-diesel vehicle with a model year earlier than 2008 or 15 or more model years old;
- Any heavy duty non-diesel vehicle not equipped with an OBD system or 15 or more model years old;
- Any new vehicle registered first in Massachusetts for the motor vehicle inspection upon its initial registration to the ultimate purchaser, except a kit vehicle; tactical military vehicles;
- Any motor vehicle or class of motor vehicles determined by the Department to present prohibitive emissions inspection problems or to be inappropriate for emissions inspection;
- Any motor vehicle operated exclusively by electric power;
Commercial

- Any vehicle that has been granted a waiver or exemption by the U.S. Environmental Protection Agency or the California Air Resources Board from emissions standards or equipment requirements to the extent of said waiver or exemption;
- Any motorcycle or moped.

**Scheduling of Emissions Inspections Effective Beginning April of 2009:**

This subsection is effective beginning October 1, 2008:

- Motor Vehicles Registered in Massachusetts. The registrant of each motor vehicle shall obtain an emissions inspection every time the vehicle is submitted for a motor vehicle inspection in accordance with 310 CMR 60.02. Registrants shall submit their vehicles for inspection no later than the last day of the month and year of expiration on the previously issued inspection certificate.
- Initial Inspection of New Kit Vehicles. When any kit vehicle is first registered in Massachusetts, including upon sale or lease to the ultimate purchaser or completion of assembly, the registrant shall obtain a visual inspection in accordance with 310 CMR 60.02(12)(c). If the certified configuration installed in the kit vehicle is from a model year vehicle subject to an OBD II test, the kit vehicle shall also receive an OBD II test for the model year of the certified configuration installed in the kit vehicle.
- Initial Registration of Motor Vehicles. A motorist shall obtain an emissions inspection as part of the motor vehicle inspection for the vehicle within seven days from the date the vehicle is first registered in Massachusetts unless exempt under 310 CMR 60.02(3)(c).
• Inspections upon Transfer. For any used motor vehicle, the motorist shall obtain an emissions inspection as part of his or her motor vehicle inspection for the vehicle within seven days of the date on which the motor vehicle is registered in Massachusetts to the new owner unless exempt in accordance with 310 CMR 60.02(3)(c).

• Massachusetts vehicles not located in state. For any motor vehicle which is not garaged or operated in Massachusetts at the time that vehicle’s emissions inspection was due, a motorist may operate the vehicle for 15 days after the vehicle’s return to Massachusetts, provided said motor vehicle bears proof satisfactory to the Department of an adequate emissions inspection from another jurisdiction. The motorist shall obtain the vehicle’s initial emissions inspection within said 15 days.

• Diesel Vehicles with a GVWR Greater Than 10,000 Pounds. Diesel vehicles with a GVWR greater than 10,000 pounds registered in Massachusetts are subject to 310 CMR 60.02(5)(a) through (e), (g), and (h). In addition, all diesel vehicles with a GVWR greater than 10,000 pounds operating on Massachusetts roads are subject to emissions testing during roadside inspections, and emissions inspection standards are applicable to emissions testing conducted during roadside inspections.

• Inspections for Program Evaluation. The Department may require a registrant to have his or her vehicle inspected upon notice from the Department for program evaluation. If the vehicle fails such inspection, the registrant may choose not to have the vehicle repaired and present the vehicle for inspection as provided at 310 CMR 60.02(5)(a).

• A motorist may obtain an initial inspection at any time prior to the month and year of expiration on the inspection certificate previously issued where the vehicle passed the previous inspection, received a waiver, or received an economic hardship failure repair extension.
Chapter 5 – Opacity Testing
Health Effects Of Diesel Emissions

The Environmental Protection Agency (EPA) recently completed a study on the effects of diesel exhaust and human health. The report is based on experiments with animals and studies of workers, including truckers and diesel mechanics, who are exposed to diesel exhaust on the job.

Diesel exhaust is comprised of a complex mixture of gases and tiny bits of soot or particulate matter (PM), which was determined by a group of independent scientists to be a “Likely Human Carcinogen.”

In addition, the California Air Resources Board identified diesel particulate as a toxic air contaminant in 1998. Older trucks and buses emit a disproportionately large amount of pollutants into the air.

The EPA is charged with managing environmental contaminants that affect public health. Because of the recent findings that suggest diesel exhaust affects public health, EPA requires emissions controls on model year 2007 diesel engines that achieve a ninety percent (90%) reduction in diesel particulates. The Commonwealth’s plan for the continued opacity testing of diesels will ensure that the vehicles currently on the road are as clean as they need to be for the protection of its residents.

Particulates:

Particulate matter (PM) is a solid or liquid produced during the operation of a diesel engine. Improper combustion will result in the formation of soot, which will be emitted from the exhaust as particulate matter. PM found in the vehicle exhaust stream is classified
as any substance present as a liquid or solid (not a gas). For diesel exhaust, carbon forms at least half of this particulate content. The remainder is made up of hydrocarbons (unburned fuel droplets and lubricating oil), sulfates (from diesel fuel sulfur content), and water. Some of these particles can be small enough to penetrate deep into the lungs and pose significant health risks.

Upon entering the lungs, the fate of particulates in the respiratory system is largely determined by their size. Particles larger than 5.0 microns are filtered out by nasal hairs or trapped in the mucous membranes. Particles between 5.0 microns and .05 microns can elude these defense mechanisms and penetrate further into the lungs, where they are deposited into the bronchioles. Within a short time the cilia or tiny hairs that line this portion of the lungs remove these particles and sweep them into the pharynx. From there they are swallowed or coughed up.

Particles smaller than .05 microns in diameter may reach the smallest structures in the lungs, the alveoli, which are tiny air sacs that line the interior of the lungs. The removal of particulates from the alveoli is more difficult and takes a much longer time, ranging from a few weeks to many years: and while deposited in the respiratory system these particles are likely to contribute to the formation of cancer.

**Particle Filters:**

In order to remove solid particles from diesel engine exhaust gas, particle filters have been developed and, beginning in model year 2007, are required in heavy-duty diesel engines. The effectiveness of these filters range from 70% to 90%.
Ozone:

Ground-level ozone is a secondary pollutant produced by the reaction of sunlight acting upon NOx and HC in the atmosphere. Massachusetts has been declared a non-attainment area due to the number of days the level of ozone in our atmosphere exceeds the limit set forth in the Clean Air Act Amendments of 1990. Exposure to excessive levels of ozone can inflame and damage the lining of the lung. If this damage occurs repeatedly, the lung may change permanently in a way that could cause long-term health effects and a lower quality of life. Ozone can aggravate chronic lung disease such as asthma, emphysema and bronchitis.

Nitrogen oxides (collectively called NOx) are formed in vehicle engines during the combustion of fuel at high temperatures. When nitrogen oxides are combined with hydrocarbons and exposed to sunlight, ground-level ozone is created. Most NOx originates from vehicles. As anyone who has taken a walk in a smoggy city would know, the short term effects of NOx are irritation of the eyes, nose, and throat. Prolonged exposure to the pollutant can cause permanent respiratory problems, such as asthma. Excessive NOx emissions can be caused by a lean air-fuel mixture, defective Exhaust Gas Recirculation (EGR), higher than normal engine temperatures.

New emissions controls for heavy-duty diesel engines, beginning in model year 2010, are designed to reduce NOx emissions. The combination of diesel particulate filters and NOx controls will provide additional air quality benefits to Massachusetts residents.

Safety Precautions:

As an official inspector and repair professional, you must take responsibility for ensuring a safe operational area while performing motor vehicle inspections. Your safety as well as the
safety of the vehicle under inspection is extremely critical. Adequate ventilation in the inspection bay to protect the inspectors is absolutely necessary.

**Basic Safety Rules Include But Are Not Limited To The Following:**

a. Prior to the inspection, ask the vehicle operator if the vehicle is experiencing any particular problems that may impact the safe operation and inspection of the vehicle.
b. Instruct the operator to move away from the inspection bay and wait in a customer waiting area while the inspection is being conducted. No persons should remain in or around the vehicle.
c. Perform a complete walk-around visual inspection of the vehicle before attempting to drive it into the service bay. Pay close attention to any items that may pose a hazard to you because you are required by law to be licensed to operate the vehicle submitted for testing.
d. The inspector must drive the vehicle into the service bay, apply and test the parking brake prior to exiting the vehicle. Pay particular attention to garage door and ceiling clearance, as vehicle height cannot be taken for granted. If the vehicle doesn’t fit, don’t test it!
e. Never leave the vehicle running while performing the safety inspection!
f. While attempting to perform a snap acceleration test, ensure the engine governor is functioning properly. Under no circumstances should the maximum RPMs be allowed to exceed the red line of the engine under test.
g. Unless adequate ventilation is available, snap acceleration testing is to be performed outside the service area.

**NOTE:** Diesel smoke contains a significant level of particulate mater (PM) small enough to penetrate deep into your lungs and could pose significant health risks. California Air Resource Board has recently identified PM as a Toxic Air Contaminant, and EPA identified diesel exhaust as a likely human carcinogen.
Chapter 5 – Opacity Testing

The Opacity Test

Smoke Test Protocol:

The Enhanced Emissions & Safety Test adopted the SAE J1667 Snap Acceleration Smoke Test procedure into regulation as the emissions test for heavy-duty diesel vehicles. A review of the results of the Smoke Test should prove helpful to owners trying to determine compliance in other states.

Equipment:

The DieselTune device is a SAE J1667 compliant partial flow opacity meter that provides all-weather functionality and self calibration. The device has the following specifications:

- Range: 0-100% opacity
- Accuracy 1.0% full scale
- Warm Up Time: 10 minutes
- Operating Conditions: -15 – 40 deg C, 10 – 90% RH
- Cable: 15m serial interface
- Wireless option may be available for additional cost

Features of an Opacity-Meter Include:

- The new opacity equipment has an acoustical component that will automatically trigger the smoke measurement during the test and discourage fraud.
- The sampling head, connected to the workstation by a cable long enough to enable testing to be performed outdoors.
Two sample probes, supplied with the unit, attach directly to the sampling head. One is a flexible probe to be used on horizontal exhaust systems, and the second is a rigid hook style probe for vertical stacks.

Automatic correction for pressure and temperature to enable extremely accurate results throughout all operating conditions.

Pressure compensation is necessary because pressure applied to the smoke will compress it, and the carbon particles will occupy a smaller space, serving to make the smoke appear denser than it would otherwise be.

Temperature compensation is necessary because as the temperature of the smoke increases it expands and appears less dense.

Warm up of the smoke meter is accomplished automatically prior to emissions testing. The sampling head of unit is heated to (120 F) to prevent condensation of the oil and water inherent in the smoke from collecting on the lenses.

**Opacity Meters:**

An opacity meter (smoke meter) works on the principal of shining a light through a smoke sample to test how much of the light is blocked by the smoke. Clean air has opacity of 0% and totally black smoke has opacity of 100%. The test equipment takes a sample of the smoke from the tail pipe for opacity testing into a separate chamber. Both the temperature and pressure of the sample must be monitored. If the temperature is increased, the smoke will expand and appear less dense. If pressure is applied, the smoke will compress and appear denser.

**NOTE: Response time: the time the smoke meter reacts is the key to the results obtained.**

\[ K = \frac{1}{L} - \log e \left( \frac{1 - N}{100} \right) \]  

\( N = \text{the percentage of light blocked.} \)

\( L = \text{light path in meters.} \ K = \text{has the units per meter.} \)
- Purging of the smoke meter is automatically triggered after warm up prior to inserting the probe into the tailpipe.
- Automatic zero shift compensation is accomplished by eliminating all of the smoke contained within the smoke meter prior to the test sequence and correcting for the remaining opacity. The zero shift values shall not exceed: +1-2.0% opacity for smoke measurements made in opacity. If the zero drift exceeds the criteria listed above the inspector will be prompted to clean the unit’s lenses.
- Response time of these units is designed to comply with the specifications set forth in SAE J-1667, and is adequate to ensure accuracy of the results. The rapid response time of these units insures that the “puff” of smoke caused by rapidly increasing an engine’s RPMs momentarilly will be measured correctly.

**Testing:**

The opacity test should be discussed with the vehicle operator prior to testing of the vehicle, because some light duty engines have a governed speed in excess of 4000 RPMs. Testing these engines with a snap acceleration can be done at the customer’s request and at his/her own risk. Original engine manufacturers state that a medium- or heavy-duty engines in proper working condition will not suffer damage due to the smoke opacity test. Diesel vehicles above 10,000 pounds are considered medium- or heavy-duty and must be tested utilizing the snap acceleration test or with an OBD II test on vehicles so equipped.

The adverse health effects associated with performing snap acceleration testing indoors has prompted The Department of Environmental Protection (DEP) and The Registry of Motor Vehicles (RMV) to recommend smoke testing outdoors. This testing option is to be used only for medium- and heavy-duty diesel powered vehicles requiring the snap acceleration test.

The SAE J1667 snap acceleration smoke test procedure is the required test for medium- and heavy-duty diesel vehicles. J1667 requires that an engine run at full throttle for a few seconds for a series of “snaps” while the smoke is being measured. While many heavy-duty fleet
garages and inspection stations have adequate air exhaust systems already installed, a particularly dirty vehicle, or a series of moderately dirty vehicles may create a concentration of diesel exhaust in the inspection bay.

To reduce the amount of diesel exhaust that may build up within an inspection bay the inspector has the option to snap the vehicle just outside the bay area under the following guidelines. This option helps to reduce the amount of diesel smoke to which an inspector is exposed. It is recommended that exhaust fans be installed within the inspection facility. These fans should be operated during and after an inspection for a period of time depending on the amount of smoke accumulation.

The safety test and OBD II test, if applicable, must be performed inside the inspection bay. If the inspector chooses to measure the smoke outside rather than inside the bay, the vehicle will be moved outside at the conclusion of the safety portion of the inspection. The tailpipe of the vehicle must be within the length of the opacity meter cable. A cable extension is not permitted as it can compromise test results by altering the response time as defined in the meter specifications. The vehicle will be placed in a location that allows the inspector an unobstructed view of the workstation monitor so he or she can trigger software commands with the remote control and subsequently follow the “snap” and “release” prompts.

If the vehicle cannot be parked within range of the cable and the monitor for viewing purposes because of the tailpipe location, the inspector may use a helper. The helper can provide signals to the inspector at the appropriate times to snap and release the throttle as instructed by the software. If a helper is used, it will remain the inspector’s responsibility to ensure the integrity of the test protocol.

NOTE: On passing or failing the emissions test, the vehicle must be moved back into the inspection bay to affix the certificate of inspection and complete the inspection.
Turn Away Document:

A turn away document should be issued, and the inspection aborted, if any of these conditions exist:

- Excessive white smoke, i.e. engine not warmed up;
- Excessive engine noise indicating unsound engine or imminent component failure;
- Excessive oil or fluid leaking;
- Dashboard indicator lamp indicates that a diesel particulate filter is in the processing of regenerating (i.e. burning off excessive amounts of soot at very high temperatures).

Snap Acceleration Test:

A total of six consecutive snaps will be performed: the first three clean out the pipe, and the last three are averaged to obtain the percentage of opacity.

Prepare the vehicle before testing by following these steps:

1. Apply parking brake and chock wheels.
3. Automatic transmission in park if available or neutral.
4. Turn off air conditioning and all accessories.
5. Turn off engine retarder i.e. Jake Brake.
6. Check the vehicle water and oil temperature gauge to verify normal operating temperature.
7. Shut off engine.
8. Check oil level.
9. Obtain engine make, year, displacement and horsepower at rated rpm from engine decal.
10. Obtain exhaust pipe outlet diameter.
Commercial

11. Enter information into workstation.
13. Release parking brake (vehicle has been chocked.)
15. Insert probe into tailpipe when prompted.
16. Let engine idle.
17. Workstation will prompt the inspector to snap open throttle and hold.
18. Release throttle when prompted by workstation.

Opacity Failures:

Vehicles failing the Opacity Test have sixty days to have the vehicle repaired and retested. While light-duty diesel vehicles may be eligible for a waiver for an OBD II inspection failure, waivers will not apply to heavy-duty diesel vehicles. Massachusetts’ law allows operation of the vehicle during this time period, after which the vehicle’s registration will be suspended. No notification of this suspension will be issued, and a thorough explanation of these options should be discussed with the motorist.

Waiver Process:

To qualify for an emissions waiver on a light-duty diesel vehicle, the repair must be performed by an ASE certified L-2 Technician, or equivalent, working at a Registered Diesel Repair Facility.

Fleet owners can make repairs to their own light-duty diesel vehicles, provided a properly qualified technician performs the repairs.
NOTES:

- Emission waivers are not available in the Enhanced Emissions & Safety Test program for heavy-duty diesel vehicles.
- Gross polluters and vehicles with emission control devices that have been tampered with are not eligible for waivers.

Emission Cut Points:

The opacity limits found in Table A. will remain in effect throughout the life of the Enhanced Emissions & Safety Test program.

NOTE: Diesel powered buses are subject to stricter emissions standards than trucks. To ensure the proper standard is applied, these vehicles are grouped together with motor homes in the Vehicle Type Selection Page.

Table A:

- Diesel trucks 10,001 lbs and over
  - 1984-1990 model year  40 percent opacity
  - 1991-1996  30 percent opacity
  - 1997 and newer  20 percent opacity
- Diesel buses 10,001 lbs and over
  - 1984- 1987 model years 40 percent opacity
  - 1988 – 1993 model years 30 percent opacity
  - 1994 and newer  20 percent opacity
Commercial

*Practical Application:*

Each Inspector will receive hands-on instruction on the proper testing of a diesel-powered vehicle utilizing the approved Smoke Meters. The inspector will be required to successfully complete Snap Acceleration. A copy of that test indicating the inspector’s name and ID number shall be required and serve as proof of competency.
A vehicle does not pass an inspection if it has one of the following defects or deficiencies:

1. *Brake System.*

   a. *Service Brakes.*

   (1) Absence of braking action on any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge. S-cam, cam, or disc brake).

   (2) Missing or broken mechanical components including: shoes, lining pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.

   (3) Loose brake components including air chambers, spiders, and cam shaft support brackets.

   (4) Audible air leak at brake chamber (Example ruptured diaphragm, loose chamber clamp, etc.).

   (5) Readjustment limits. The maximum stroke at which brakes should be readjusted is given below. Any brake $\frac{1}{4}$", or more past the readjustment limit or any two brakes less than $\frac{1}{4}$", beyond the readjustment limit shall be cause for rejection. Stroke shall be measured with engine off and reservoir pressure of 80 to 90 psi with brakes fully applied.
### BOLT TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Effective area (sq. in.)</th>
<th>Outside dia. (in.)</th>
<th>Maximum stroke at which brakes should be readjusted</th>
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<tbody>
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<td>A</td>
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<tr>
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<td>D</td>
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<td>E</td>
<td>9</td>
<td>6 $\frac{3}{16}$</td>
<td>1 $\frac{3}{8}$</td>
</tr>
<tr>
<td>F</td>
<td>36</td>
<td>11</td>
<td>2 $\frac{3}{4}$</td>
</tr>
<tr>
<td>G</td>
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<td>9 $\frac{7}{8}$</td>
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### ROTOCHAMBER DATA

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<td>2</td>
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<td>7 $\frac{1}{16}$</td>
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<td>36</td>
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<td>7 $\frac{5}{8}$</td>
<td>2 $\frac{3}{4}$</td>
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<tr>
<td>50</td>
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<td>8 $\frac{7}{8}$</td>
<td>3</td>
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### CLAMP TYPE BRAKE CHAMBER DATA

<table>
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<th>Maximum stroke at which brakes should be readjusted</th>
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<td>1 1/4</td>
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<tr>
<td>30</td>
<td>30</td>
<td>8 3/32</td>
<td>2</td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>9</td>
<td>2 3/4</td>
</tr>
</tbody>
</table>

1” (2” for long stroke design).

**WEDGE BRAKE DATA.** —Movement of the scribe mark on the lining shall not exceed 1/16 inch.

(6) Brake linings or pads.

(a) Lining or pad is not firmly attached to the shoe;

(b) Saturated with oil, grease, or brake fluid; or

(c) Non steering axles: Lining with a thickness less than 1/4 inch at the shoe center for air drum brakes, 1/16 inch or less at the shoe center for hydraulic and electric drum brakes, and less than 1/8 inch for air disc brakes.

(d) Steering axles: Lining with a thickness less than 1/4 inch at the shoe center for drum brakes, less than 1/8 inch for air disc brakes and 1/16 inch or less for hydraulic disc and electric brakes.

(7) Missing brake on any axle required to have brakes.

(8) Mismatch across any power unit steering axle of:

(a) Air chamber sizes.

(b) Slack adjuster length.
b. **Parking Brake System.** No brakes on the vehicle or combination are applied upon actuation of the parking brake control, including driveline hand controlled parking brakes.

c. **Brake Drum or Rotors.**

(1) With any external crack or cracks that open upon brake application (do not confuse short hairline heat check cracks with flexural cracks).

(2) Any portion of the drum or rotor missing or in danger of falling away.

d. **Brake Hose.**

(1) Hose with any damage extending through the outer reinforcement ply. (Rubber impregnated fabric cover is not a reinforcement ply). (Thermoplastic nylon may have braid reinforcement or color difference between cover and inner tube. Exposure of second color is cause for rejection.

(2) Bulge or swelling when air pressure is applied.

(3) Any audible leaks.

(4) Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube).

(5) Air hose cracked, broken or crimped.

e. **Brake Tubing**

(1) Any audible leak.

(2) Tubing cracked, damaged by heat, broken or crimped

f. **Low Pressure Warning Device** missing, inoperative, or does not operate at 55 psi and below, or \( \frac{1}{2} \) the governor cut out pressure, whichever is less.

g. **Tractor Protection Valve.** Inoperable or missing tractor protection valve(s) on power unit.

h. **Air Compressor.**

(1) Compressor drive belts in condition of impending or probable failure.

(2) Loose compressor mounting bolts.

(3) Cracked, broken or loose pulley.
(4) Cracked or broken mounting brackets, braces or adapters.

i. Electric Brakes.

(1) Absence of braking action on any wheel required to have brakes.

(2) Missing or inoperable breakaway braking device.


(1) Master cylinder less than 1/4 full.

(2) No pedal reserve with engine running except by pumping pedal.

(3) Power assist unit fails to operate.

(4) Seeping or swelling brake hose(s) under application of pressure.

(5) Missing or inoperative check valve.

(6) Has any visually observed leaking hydraulic fluid in the brake system.

(7) Has hydraulic hose(s) abraded (chafed) through outer cover-to-fabric layer.

(8) Fluid lines or connections leaking restricted, crimped, cracked or broken.

(9) Brake failure or low fluid warning light on and/or inoperative.

k. Vacuum Systems. Any vacuum system which:

(1) Has insufficient vacuum reserve to permit one full brake application after engine is shut off.

(2) Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, broken or has collapse of vacuum hose(s) when vacuum is applied.

(3) Lacks an operative low vacuum warning device as required.
2. Coupling Devices.

a. Fifth Wheels.

(1) Mounting to frame.

(a) Any fasteners missing or ineffective.

(b) Any movement between mounting components.

(c) Any mounting angle iron cracked or broken.

(2) Mounting plates and pivot brackets.

(a) Any fasteners missing or ineffective.

(b) Any welds or parent metal cracked.

(c) More than $\frac{3}{8}$ inch horizontal movement between pivot bracket pin and bracket.

(d) Pivot bracket pin missing or not secured.

(3) Sliders.

(a) Any latching fasteners missing or ineffective.

(b) Any fore or aft stop missing or not securely attached.

(c) Movement more than $\frac{3}{8}$ inch between slider bracket and slider base.

(d) Any slider component cracked in parent metal or weld.

(4) Lower coupler.

(a) Horizontal movement between the upper and lower fifth wheel halves exceeds $\frac{1}{2}$ inch.

(b) Operating handle not in closed or locked position.

(c) Kingpin not properly engaged.

(d) Separation between upper and lower coupler allowing light to show through from side to side.

(e) Cracks in the fifth wheel plate.
Exceptions: Cracks in fifth wheel approach ramps and casting shrinkage cracks in the ribs of the body of a cast fifth wheel.

(f) Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.

b. Pintle Hooks.

(1) Mounting to frame.

(a) Any missing or ineffective fasteners (a fastener is not considered missing if there is an empty hole in the device but no corresponding hole in the frame or vice versa).

(b) Mounting surface cracks extending from point of attachment (e.g., cracks in the frame at mounting bolt holes).

(c) Loose mounting.

(d) Frame crossmember providing pintle hook attachment cracked.

(2) Integrity.

(a) Cracks anywhere in pintle hook assembly.

(b) Any welded repairs to the pintle hook.

(c) Any part of the horn section reduced by more than 20%.

(d) Latch insecure.

c. Drawbar/Towbar Eye.

(1) Mounting.

(a) Any cracks in attachment welds.

(b) Any missing or ineffective fasteners.

(2) Integrity.

(a) Any cracks.

(b) Any part of the eye reduced by more than 20%.

d. Drawbar/Towbar Tongue.
(1) Slider (power or manual).

(a) Ineffective latching mechanism.

(b) Missing or ineffective stop.

(c) Movement of more than 1/4 inch between slider and housing.

(d) Any leaking, air or hydraulic cylinders, hoses, or chambers (other than slight oil weeping normal with hydraulic seals).

(2) Integrity.

(a) Any cracks.

(b) Movement of 1/4 inch between subframe and drawbar at point of attachment.

e. Safety Devices.

(1) Safety devices missing.

(2) Unattached or incapable of secure attachment.

(3) Chains and hooks.

(a) Worn to the extent of a measurable reduction in link cross section.

(b) Improper repairs including welding, wire, small bolts, rope and tape.

(4) Cable.

(a) Kinked or broken cable strands.

(b) Improper clamps or clamping.

f. Saddle Mounts.

(1) Method of attachment.

(a) Any missing or ineffective fasteners.

(b) Loose mountings.

(c) Any cracks or breaks in a stress or load bearing member.
(d) Horizontal movement between upper and lower saddle mount halves exceeds $\frac{1}{4}$ inch.

3. **Exhaust System.**

   a. Any exhaust system determined to be leaking at a point forward of or directly below the driver/sleeper compartment.

   b. A bus exhaust system leaking or discharging to the atmosphere:

      (1) Gasoline powered — excess of 6 inches forward of the rearmost part of the bus.

      (2) Other than gasoline powered — in excess of 15 inches forward of the rearmost part of the bus.

      (3) Other than gasoline powered — forward of a door or window designed to be opened. (Exception: emergency exits).

   c. No part of the exhaust system of any motor vehicle shall be so located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.

4. **Fuel System.**

   a. A fuel system with a visible leak at any point.

   b. A fuel tank filler cap missing.

   c. A fuel tank not securely attached to the motor vehicle by reason of loose, broken or missing mounting bolts or brackets (some fuel tanks use springs or rubber bushings to permit movement).

5. **Lighting Devices.**

   All lighting devices and reflectors required by Section 393 shall be operable.
6. **Safe loading.**

a. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall onto the roadway.

b. Protection Against Shifting Cargo —Any vehicle without a front end structure or equivalent device as required.

7. **Steering Mechanism.**

a. *Steering Wheel Free Play* (on vehicles equipped with power steering the engine must be running)

**STEERING WHEEL FREE PLAY**

<table>
<thead>
<tr>
<th>Steering wheel diameter</th>
<th>Manual steering system</th>
<th>Power steering system</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>2&quot;</td>
<td>4 1/2&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>2 1/4&quot;</td>
<td>4 3/4&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>2 1/2&quot;</td>
<td>5 1/4&quot;</td>
</tr>
<tr>
<td>22&quot;</td>
<td>2 3/4&quot;</td>
<td>5 3/4&quot;</td>
</tr>
</tbody>
</table>

b. **Steering Column.**

(1) Any absence or looseness of U-bolt(s) or positioning part(s).

(2) Worn, faulty or obviously repair welded universal joint(s).

(3) Steering wheel not properly secured.

c. **Front Axle Beam and All Steering Components Other Than Steering Column.**

(1) Any crack(s).

(2) Any obvious welded repair(s).

d. **Steering Gear Box.**

(1) Any mounting bolt(s) loose or missing.

(2) Any crack(s) in gear box or mounting brackets.
e. **Pitman Arm.** Any looseness of the pitman arm on the steering gear output shaft.

f. **Power Steering.** Auxiliary power assist cylinder loose.

g. **Ball and Socket Joints.**

(1) Any movement under steering load of a stud nut.

(2) Any motion, other than rotational, between any linkage member and its attachment point of more than ¼ inch.

h. **Tie Rods and Drag Links.**

(1) Loose clamp(s) or clamp bolt(s) on tie rods or drag links.

(2) Any looseness in any threaded joint.

i. **Nuts.** Nut(s) loose or missing on tie rods pitman arm, drag link, steering arm or tie rod arm.

j. **Steering System.** Any modification or other condition that interferes with free movement of any steering component.

8. **Suspension.**

a. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position.

(After a turn, lateral axle displacement is normal with some suspensions. Forward or rearward operation in a straight line will cause the axle to return to alignment).

b. **Spring Assembly.**

(1) Any leaves in a leaf spring assembly broken or missing.

(2) Any broken main leaf in a leaf spring assembly. (Includes assembly with more than one main spring).

(3) Coil spring broken.

(4) Rubber spring missing.
(5) One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum or frame.

(6) Broken torsion bar spring in a torsion bar suspension.

(7) Deflated air suspension, i.e., system failure, leak, etc.

c. **Torque, Radius or Tracking Components.**

Any part of a torque, radius or tracking component assembly or any part used for attaching the same to the vehicle frame or axle that is cracked, loose, broken or missing. (Does not apply to loose bushings in torque or track rods.)

9. **Frame**

a. **Frame Members.**

(1) Any cracked, broken, loose, or sagging frame member.

(2) Any loose or missing fasteners including fasteners attaching functional component such as engine, transmission, steering gear, suspension, body parts, and fifth wheel.

b. **Tire and Wheel Clearance.** Any condition, including loading, that causes the body or frame to be in contact with a tire or any part of the wheel assemblies

c. (1) **Adjustable Axle Assemblies (Sliding Subframes).** Adjustable axle assembly with locking pins missing or not engaged.

10. **Tires.**

a. Any tire on any steering axle of a power unit.

(1) With less than \(\frac{4}{32}\) inch tread when measured at any point on a major tread groove.

(2) Has body ply or belt material exposed through the tread or sidewall.

(3) Has any tread or sidewall separation.

(4) Has a cut where the ply or belt material is exposed.
(5) Labeled "Not for Highway Use" or displaying other marking which would exclude use on steering axle.

(6) A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word "radial" embossed in metal stems, or the word "radial" molded in rubber stems.

(7) Mixing bias and radial tires on the same axle.

(8) Tire flap protrudes through valve slot in rim and touches stem.

(9) Regrooved tire except motor vehicles used solely in urban or suburban service (see exception in §393.75(e).)

(10) Boot, blowout patch or other ply repair.

(11) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.

(12) Tire is flat or has noticeable (e.g., can be heard or felt) leak.

(13) Any bus equipped with recapped or retreaded tire(s).

(14) So mounted or inflated that it comes in contact with any part of the vehicle.

b. All tires other than those found on the steering axle of a power unit:

(1) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.

(2) Tire is flat or has noticeable (e.g., can be heard or felt) leak.

(3) Has body ply or belt material exposed through the tread or sidewall.

(4) Has any tread or sidewall separation.

(5) Has a cut where ply or belt material is exposed.

(6) So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate.)

(7) Is marked "Not for highway use" or otherwise marked and having like meaning.

(8) With less than $\frac{2}{32}$ inch tread when measured at any point on a major tread groove.
11. **Wheels and Rims.**

a. **Lock or Side Ring.** Bent, broken, cracked, improperly seated, sprung or mismatched ring(s).

b. **Wheels and Rims.** Cracked or broken or has elongated bolt holes.

c. **Fasteners (both spoke and disc wheels).** Any loose, missing, broken, cracked, stripped or otherwise ineffective fasteners.

d. **Welds.**

   (1) Any cracks in welds attaching disc wheel disc to rim.

   (2) Any crack in welds attaching tubeless demountable rim to adapter.

   (3) Any welded repair on aluminum wheel(s) on a steering axle.

   (4) Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the steering axle.

12. **Windshield Glazing.**

(Not including a 2 inch border at the top, a 1 inch border at each side and the area below the topmost portion of the steering wheel.) Any crack, discoloration or vision reducing matter except: (1) coloring or tinting applied at time of manufacture; (2) any crack not over $\frac{1}{4}$ inch wide, if not intersected by any other crack; (3) any damaged area not more than $\frac{3}{4}$ inch in diameter, if not closer than 3 inches to any other such damaged area; (4) labels, stickers, decalcomania, etc. (see §393.60 for exceptions).

13. **Windshield Wipers.**

Any power unit that has an inoperative wiper, or missing or damaged parts that render it ineffective.

The vehicle portion of the FMCSA's North American Uniform Driver-Vehicle Inspection Procedure (NAUD-VIP) requirements, CVSA's North American Commercial Vehicle Critical Safety Inspection Items and Out-Of-Service Criteria and Appendix G of subchapter B are similar documents and follow the same inspection procedures. The same items are required to be inspected by each document. FMCSA's and CVSA's out-of-service criteria are intended to be used in random roadside inspections to identify critical vehicle inspection items and provide criteria for placing a vehicle(s) out-of-service. A vehicle(s) is placed out-of-service only when by reason of its mechanical condition or loading it is determined to be so imminently hazardous as to likely cause an accident or breakdown, or when such condition(s) would likely contribute to loss of control of the vehicle(s) by the driver. A certain amount of flexibility is given to the inspecting official whether to place the vehicle out-of-service at the inspection site or if it would be less hazardous to allow the vehicle to proceed to a repair facility for repair. The distance to the repair facility must not exceed 25 miles. The roadside type of inspection, however, does not necessarily mean that a vehicle has to be defect free in order to continue in service.

In contrast, the Appendix G inspection procedure requires that all items required to be inspected are in proper adjustment, are not defective and function properly prior to the vehicle being placed in service.
Appendix B
540 CMR 4.00: ANNUAL SAFETY AND COMBINED SAFETY AND EMISSIONS INSPECTION OF ALL MOTOR VEHICLES, TRAILERS, SEMI-TRAILERS AND CONVERTER DOLLIES

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4.01: Scope and Applicability

540 CMR 4.00 is adopted by the Registrar of Motor Vehicles pursuant to the authority of M.G.L. c. 90, § 31. 540 CMR 4.00 establishes Rules and Regulations for the Safety and Combined Safety and Emissions Inspections of all motor vehicles registered in the Commonwealth of Massachusetts under the authority of M.G.L. c. 90, § 7A. 540 CMR 4.00 also establishes regulations for the issuance of various inspection certificates pursuant to M.G.L. c. 90, § 7V, (a)(b)(c), and Regulations for the licensing of stations and inspectors pursuant to M.G.L. c. 90, § 7W. The failure of a motor vehicle to meet the requirements of the Safety and Combined Safety and Emissions Inspections will result in the suspension of the vehicle's certificate of registration pursuant of M.G.L. c. 90, § 20.

4.02: Special Definitions

In addition to the definitions set forth in M.G.L. c 90, § 1. the following special definitions shall also apply:

1. **Antique Motor Car** shall mean any motor vehicle which has been assigned an antique registration plate.

2. **ALARS** shall mean the Automated Licensing and Registration Systems used by the Registry of Motor Vehicles.

3. **Certificate of Inspection** shall mean a serially numbered, adhesive sticker, device, or symbol, as may be prescribed by the Registrar, indicating a motor vehicle has met the inspection requirements established by the Registrar. The Registrar may prescribe the use of one or more categories of said Certificates.

4. **Certificate of Rejection** shall mean a serially numbered, adhesive sticker, document, device or symbol, as may be prescribed by policies and procedures of the Registrar, indicating a motor vehicle or motorcycle has failed to meet the Safety and Combined Safety and Emissions Inspection requirements.
(5) Certificate of Waiver shall mean a serially numbered device or symbol, as may be prescribed by the Registrar, indicating that the requirement of passing the Emissions portion of the Combined Safety and Emissions Inspection has been waived for a vehicle pursuant to 540 CMR 4.00.

(6) Effective until October 1, 2008, Class F License shall mean the license issued to a Fleet Inspection Station for Safety or Safety and Emissions Inspections as granted by the Registrar (except motorcycles).

(7) Effective until October 1, 2008, Class FR License shall mean the license issued to a Fleet Inspection Station for Safety or Safety and Emissions Inspections as granted by the Registrar (except motorcycles) using mobile equipment for performing inspections at multiple locations owned by said fleet.

(8) Effective until October 1, 2008 Class H License shall mean the license issued to a Public Inspection Station for Safety and Emissions Inspections of heavy duty vehicles of all fuel types over 10,000 lbs, commercial motor vehicles, trailers, semi-trailers and converter dollies.

(9) Effective until October 1, 2008 Class HD License shall mean the license issued to a public inspection station for safety and emissions inspections of heavy duty diesel vehicles over 10,000 lbs, commercial motor vehicles, trailers, semi-trailers and converter dollies.

(10) Effective until October 1, 2008 Class HG License shall mean the license issued to a public inspection station for safety and emissions inspections of all fuel types except diesel vehicles over 10,000 lbs, commercial motor vehicles, trailers, semi-trailers and converter dollies.

(11) Effective until October 1, 2008, Class LD License shall mean the license issued to a Public Inspection Station for Safety and Emissions Inspections of light duty diesel vehicles under 10,000 lbs (except motorcycles).

(12) Effective until October 1, 2008 Class LG License shall mean the license issued to a Public Inspection Station for Safety and Emissions Inspections of light duty vehicles under 10,000 lbs of all fuel types except diesel (and motorcycles).

(13) Effective until October 1, 2008 Class LGD License shall mean the license issued to a Public Inspection Station for Safety and Emissions Inspections of light duty vehicles under 10,000 lbs of all fuel types (except motorcycles).

(14) Effective until October 1, 2008, Class V License shall mean the license issued to a Public Inspection Station for Safety and Emissions Inspections of all motor vehicles of all fuel types and weights, commercial motor vehicles, trailers, semi-trailers and converter dollies (except motorcycles).

(15) Effective until October 1, 2008, Class M License shall mean the license issued to a Public Inspection Station for Safety Inspections of motorcycles as defined in M.G.L. c. 90, § 1.

(16) Effective beginning October 1, 2008 Class A License shall mean the license issued to a Public or Fleet inspection station conducting non-commercial light duty gas and diesel inspections of vehicles 10,000 lbs (GVWR) or less.
(17) Effective beginning October 1, 2008 Class B License shall mean the license issued to a Public or Fleet inspection station conducting commercial and non-commercial light and medium duty gas and diesel inspections of vehicles 26,000 lbs. (GVWR) or less including light-duty pole or pull trailers only.

(18) Effective beginning October 1, 2008 Class C License shall mean the license issued to a Public or Fleet inspection station conducting all commercial medium and heavy duty inspections of vehicles over 10,000 lbs. (GVWR) including all trailers, semi-trailers and converter dollies.

(19) Effective beginning October 1, 2008 Class D License shall mean the license issued to a Public or Fleet inspection station conducting all commercial and non-commercial light, medium and heavy duty inspections of all vehicles including all trailers, semi-trailers and converter dollies.

(20) Effective beginning October 1, 2008 Class E License shall mean the license issued to a Public or Fleet inspection station conducting heavy duty commercial inspection of vehicles over 26,000 lbs. (GVWR) including all trailers, semi-trailers and converter dollies.

(21) Effective beginning October 1, 2008 Class F License shall mean the license issued to an individual or corporation performing inspections on commercial vehicles of all fuel types and weights, including all trailers, semi-trailers and converter dollies, owned or leased by a fleet, using mobile equipment for the performance of such vehicle inspections. The performance of commercial vehicle inspections at multiple repair and maintenance facilities owned by the fleet shall be subject to the following conditions:

(a) The repair facility shall consist of a building on-site with a discernible address for the purposes of fleet administration with an inspection bay or area suitable for inspections. Said fleet is contracting the inspection of existing commercial vehicles with gross vehicle weight ratings of 10,001 pounds or more, including all trailers, semi-trailers and converter dollies to the Class F Licensee at the same physical location.
(b) Vehicles owned or leased by said fleet and registered as "noncommercial" motor vehicles shall not be eligible for inspection by Class F Licensees.
(c) Noncommercial motor vehicles furnished for regular use by individual employees of said fleet shall not be eligible for inspection by Class F Licensees.
(d) All Class F Licensees utilizing mobile equipment for the testing of such commercial vehicles, trailers, semi-trailers or converter dollies owned or leased by said fleet shall have on-site OBD, opacity or any other emissions equipped workstation capable of performing such emissions inspections as required by 310 CMR 60.02.
(e) The annual number of commercially registered vehicles, trailers, semi-trailers or converter dollies inspected by Class F Licensees with gross vehicle weight ratings of less than 10,001 lbs shall not exceed the annual number of commercially registered vehicles with gross vehicle weight ratings of more than 10,001 lbs. (GVWR).

(22) Effective beginning October 1, 2008 Class M License shall mean the license issued to a Public or Fleet Inspection Station conducting motorcycle inspections.

(23) Commercial Motor Vehicle Inspector shall mean an individual licensed by the Registrar as properly qualified under 540 CMR 4.08(1)(h).
(24) **Commercial Motor Vehicle** shall mean any motor vehicle which is not a private passenger motor vehicle, antique motor car, motorcycle, auto home, house trailer, taxicab, ambulance, hearse, livery vehicle, or school pupil transport vehicle. A commercial motor vehicle shall include the following vehicles:

(a) The vehicle has a gross vehicle weight rating or gross combination weight rating of 10,001 or more pounds; or

(b) The vehicle is designed to transport more than 15 passengers, including the driver; or

(c) The vehicle is used in the transportation of hazardous materials in a quantity requiring placarding in accordance with the Hazardous Materials Regulations of the United States Department of Transportation. Any commercial motor vehicle that singularly has a gross vehicle weight rating of 10,001 pounds or less and is designed to meet emissions standards, shall be submitted for an emissions inspection in addition to all applicable safety inspection requirements; or

(d) A single, full or semi-trailer, used in commerce, with a manufacturer's gross vehicle weight rating over 3,000 lbs.

(25) **Commissioner** shall mean the Commissioner of the Department of Environmental Protection for the Commonwealth.

(26) **DEP** shall mean Department of Environmental Protection.

(27) **Dynamometer** shall mean a device which applies a load to a vehicle's drive wheels during an emissions inspection while the vehicle is being operated in a stationary, secure position to simulate actual driving conditions.

(28) **Exempt Vehicles From Emission Standards** shall mean any motor vehicle exempted under 310 CMR 60.02 and in accordance with M.G.L. c. 111, § 142M.

(29) **Federal Motor Carrier Safety Regulations** shall mean the most current published edition of Title 49 U.S.C. Parts 390 to 397 including appendix G as identified by USDOT/FMCSA.

(30) **Fleet Inspection Station** shall mean a business which owns or maintains a fleet of at least 15 motor vehicles and maintains a garage for the repair and maintenance of those vehicles and is licensed by the Registrar to perform the Safety or Combined Safety and Emissions Inspection on its motor vehicles or motor vehicles owned by other fleets that are in the same vehicle class.

(31) **Fleet Inspection Station for Commercial Motor Vehicles** shall mean an Inspection Station licensed by the Registrar to perform Safety or Combined Safety and Emissions Inspections on Commercial Motor Vehicles.
(32) General Registration Holder shall mean any manufacturer, dealer, repairman, owner-contractor, transporter, farmer, dealer in recreational vehicles, trailers, boat trailers, or forester, all as defined in M.G.L. c. 90, § 1 and regulated by 540 CMR 18.00, who has been issued a general registration plate pursuant to M.G.L. c. 90, § 5.

(33) Inspection Station Agreement shall mean the contract between the Network Contractor and the Inspection Stations which sets forth their respective responsibilities and duties.

(34) Licensed Inspector shall mean an individual licensed by the Registrar in accordance with 540 CMR 4.00 as properly trained to perform a Massachusetts Motor Vehicle Safety and/or Emissions Inspection.

(35) Licensee shall mean a holder of an Inspection Station License of any Class issued in accordance with 540 CMR 4.00.

(36) Mobile Commercial Motor Vehicle Inspector shall mean an individual, certified and licensed, who meets the requirements of 540 CMR 4.00 who may inspect commercial motor vehicles at a repair facility of any commercial motor vehicle operation that meets the minimum requirements for inspections prescribed for Commercial Vehicle Inspection Facilities by the Registrar.

(37) Network Contractor shall mean the private entity which contracts with the DEP and RMV to develop, manage and implement the enhanced emissions and safety inspection program in accordance with St. 1997, c. 240.

(38) New Car Endorsement shall mean an endorsement to a class A, B or D license which permits class 1 automobile dealers to inspect new vehicles under 10,000 GVWR prior to delivery to a customer in accordance with 310 CMR 6.02 “Initial Inspection of New Motor Vehicles” and in accordance with policies and procedures promulgated by the Registrar.

(39) Out of Service Criteria shall mean the most current "Out of Service Criteria" as prescribed in the North American Uniform Out-of-Service Criteria published by the Commercial Vehicle Safety Alliance(CVSA).

(40) Referee Station shall mean a location which may be designated by the Registrar to verify the accuracy of inspections performed by Licensed Inspection stations and to grant certificates of waiver.

(41) Registrar shall mean the Registrar of Motor Vehicles.

(42) Semi-Trailer shall mean a trailer designed and used in combination with a tractor so that some part of the weight of the trailer and that of its load rests upon, and is carried by, the tractor.

(43) Effective beginning October 1, 2008 7D Endorsement shall mean an endorsement to a class A, B or D license which permits the Licensee to inspect 7D (pupil transport) vehicles in accordance with M.G.L. chapter 90, section 7D, 540 CMR 21.00 and policies and procedures promulgated by the Registrar.

(44) Trailer shall mean any vehicle or object on wheels and having no motor power of its own, but is drawn by, or used in combination with, a motor vehicle.
(45) **Turnaway Document** shall mean a document created by a Workstation and provided to an operator by an inspection station explaining the reason(s) a particular vehicle can not be tested.

(46) **Windshield Replacement Certificate** shall mean a serially numbered adhesive sticker, device or symbol as prescribed by the Registrar to be used in conjunction with any legible valid Certificate of Inspection, irrespective of any void displayed, removed due to the replacement of a windshield and displayed on the newly installed windshield on the same vehicle. Such Certificate shall be issued in accordance with the policies and procedures established by the Registrar.

(47) **Workstation** shall mean the complete set of inspection equipment approved by the Department and required by the Registrar for an inspection station.

4.03: Requirements for Initial and Subsequent Annual Inspection

(1) General Provisions. Every owner or person in control of a Massachusetts registered motor vehicle shall submit the vehicle for inspection under the following rules:

Inspection Upon Registration. Every owner or person in control of a motor vehicle which is newly acquired in the Commonwealth shall submit such motor vehicle for a required inspection within seven days of the date on which the motor vehicle is registered to said owner in the Commonwealth.

(a) Subsequent Inspection. Every owner or person in control of a Massachusetts registered motor vehicle shall submit the vehicle for the required inspection annually, no later than the date of expiration on the previously issued Certificate of Inspection or as notified in a manner prescribed by the registrar. Early renewals are permitted.

(b) Validity of Certificates of Inspection. Certificates of Inspection displaying void(s) due to a windshield replacement, which are also displaying a duly issued Windshield Replacement Certificate, shall be valid until the expiration of the Certificate of Inspection or when ownership of the vehicle is transferred, or as notified in a manner prescribed by the Registrar, whichever occurs first.

(c) General Registration Holders. Every motor vehicle owned by a General Registration holder, except for motor vehicles held for sale and demonstration by a dealer, shall be inspected pursuant to 540 CMR 4.00.

(d) Farm Tractor. Any tractor or other self propelled vehicle used exclusively for agricultural or farming purposes, except automobiles and trucks, the use of which is declared by the owner or person in control thereof to be restricted to the period from a half hour before sunrise to a half hour after sunset and which is operated in or upon any way during such period shall be inspected and shall be equipped with one stop light and with brakes as manufactured, including a stationary brake with ratchet and pawl.

(e) Temporary Registration Plates. Motor vehicles bearing temporary registration plates shall be inspected in accordance with the 540 CMR 4.00.
(f) Out of State Registration. Motor vehicles submitted for inspection that are registered in any other state or jurisdiction shall be inspected in accordance with the applicable provisions of 540 CMR 4.00 and the policies and procedures established by the Registrar.

(g) Inspection Upon Return to Commonwealth. A motor vehicle which is not garaged or operated within the Commonwealth during its assigned inspection period may be operated for 15 days after its return to the Commonwealth if the motor vehicle bears satisfactory proof of adequate Emissions or Safety and Emissions Inspection from another jurisdiction. The owner or person in control of the vehicle shall submit the vehicle for required inspection within said 15 days. A motor vehicle which is not garaged or operated within the Commonwealth during its assigned inspection period may be operated for 3 days after its return to the Commonwealth if the motor vehicle does not bear satisfactory proof of inspection from another jurisdiction. The owner or person in control of the vehicle shall submit the vehicle for required inspection within said 3 days. All vehicles actively registered which are either not garaged or operated, within the Commonwealth or temporarily off the road and unable to be inspected during their assigned inspection period must notify the registrar no later than the date of expiration on the previously issued Certificate of Inspection in a manner prescribed by the registrar.

(h) Common Carrier Motor Vehicles. The mandatory inspection requirements of 540 CMR 4.00 are not a substitute for any inspection which may be required by the Department of Public Utilities pursuant to M.G.L. c. 159A.

4.05: Procedures for Inspection of Commercial Motor Vehicles

(1) Prior to Beginning Inspection, a visual check of the vehicle shall be made to determine that ice and snow accumulation or the condition of the suspension system, will not impede or interfere with the proper aiming of headlamps. The Certificate of Registration shall be inspected and the information contained thereon, including license plate, vehicle description, and vehicle identification number, shall be verified by observation of the subject vehicle. The information contained on the Certificate of Registration shall also be matched with the vehicle information accessible to the workstation. The data appearing on the Registration Certificate, the accessible to the Workstation, the data appearing on the vehicle license plate, and the vehicle identification number and description must match in order for the inspection to proceed. No fee shall be assessed for an inspection which does not proceed due to a data match failure.

(a) A Turnaway Document must be given to the operator of any vehicle refused for inspection due to an incorrect vehicle identification number, registration number, or for any reason a vehicle is otherwise refused for inspection.

(b) No certificate of registration need be produced for vehicle having a general registration issued in accordance with the provisions of M.G.L. c. 90, § 5. Either a photocopy of the original certificate of registration or the original certificate of registration may be produced for other motor vehicles.

(c) A licensed inspector may refuse to conduct an inspection if the motor vehicle's registration is determined to be invalid.
(2) Inspection of the Vehicle. All inspections must be performed in accordance with the applicable provisions of 540 CMR 4.00 and 310 CMR 60.02 by licensed inspectors in the approved inspection bay or in a designated area approved for inspections by the Registrar.

Inspectors must first collect the proper fee.
(a) Inspectors must first collect the proper fee for the inspection.

(b) License plate(s), shall be undamaged, securely mounted, clean and clearly visible. No bumper, trailer hitch or other accessory may interfere with a clear view of the license plates. The license plate must be mounted in the proper location on the rear of the vehicle if the vehicle has been issued one plate. Both license plates must be mounted in the proper location on the rear and front of the vehicle, if the vehicle has been issued two plates. Any decorative license plate or license plate replica not issued by the Registry of Motor Vehicles on which any jurisdiction name appears must be removed from the vehicle.

(c) General Registration Holders, every motor vehicle in possession of a general registration holder shall be checked for the proper display of the compliance decal issued pursuant to 540 CMR 18.03. The Vehicle Identification Number (V.I.N.) and Registration Number indicated on the decal shall correspond with said number of the vehicle inspected. This requirement does not apply to motor vehicles owned and displaying a dealer plate.

(d) Upon the completion of the inspection and a determination by the inspector that the vehicle meets all inspection requirements, the inspector will remove the old certificate of inspection from the windshield, and affix the new Certificate of Inspection and provide the motorist with all inspection documentation and program literature as required.

(3) Perform Emissions Testing Requirements and Procedures.

(a) Exemptions. The following motor vehicles are exempt from emissions testing:
Any vehicle exempted pursuant to 310 CMR 60.02(3)(b) and in accordance with M.G.L. c. 111, § 142M.

(b) Conformance with Environmental Standards. All Emissions Inspections shall be performed in accordance with the applicable provisions of 310 CMR 60.02 and 540 CMR 4.00, and any written policies or procedures provided by the Registrar or the Commissioner.

(4) Reflectors. Every commercial motor vehicle or trailer weighing, with its load, more than 12,000 pounds shall be equipped with a red reflector at the rear.

(5) Chock Blocks. Every bus having a seating capacity of more than seven passengers, every truck weighing, unloaded, more than 4,000 pounds and every tractor, trailer, semi-trailer or combination which is not equipped with positive spring loaded, air parking brakes, shall be equipped with one pair of adequate safety chock blocks.

(6) Splash Guards. Every motor vehicle or trailer, except passenger motor vehicles, shall be equipped with suitable guards which will effectively reduce the spray or splash, to the rear, of mud, water, or slush, caused by the rear wheels.
(7) Marker Light. Commercial motor vehicles and trailers, having a registered carrying capacity of three tons or over, shall have an amber light attached to the extreme left of the front of the vehicle, so attached and adjusted as to indicate the extreme left lateral extension of the vehicle or load.

(8) Horn. Sound horn to test for adequate signal. The horn must be securely fastened to the vehicle.

(9) Warning Devices. Every commercial motor vehicle or trailer that is required to have a backup warning device shall be checked for proper operation of said device. Every commercial motor vehicle equipped with a dump body shall be equipped with an adequate audible warning system to alert the operator when the dump body is in an upright and elevated position.

(10) Bumpers. The existence of broken or bent bumpers, fenders, exterior sheet metal or moldings having sharp edges or abnormal protrusions extending beyond normal vehicle extremities so as to constitute a danger to pedestrians and other motor vehicle traffic shall be reason for rejection. If bumper face plates are removed, bumper brackets must also be removed. On vehicles equipped with air bags, the front bumper may not be removed. The vehicle hood, door(s), luggage compartment lid, and battery or engine compartment doors or lids, if so equipped, must be capable of being firmly latched.

(11) Fenders. Front and rear fenders must be in place. Every commercial motor vehicle which is equipped with tires which extend beyond the fenders or body of such vehicle shall be equipped with flaps or suitable guards to reduce such spray or splash to the rear and side.

(12) Seat Belts. Shall be inspected to assure that all are maintained in good order. The Requirements of Title 49 Code of Federal Regulations, Part 393.93 shall apply.

(13) Air Bags. Effective beginning October 1, 2008, vehicles so equipped must comply with 49 Code of Federal Regulations, Parts 571 through 595. The inspector shall check for proper operation of the airbag malfunction indicator lamp. If not operating as designed, or if the lamp indicates a malfunction in the airbag system, or if any airbag originally equipped in the vehicle is deployed or is missing the vehicle shall be rejected.

(14) Procedures for Inspecting Certain Commercial Motor Vehicles and Trailers Pursuant to Federal Regulation. 49 CFR Parts 390 through 397 of Title 49, including Appendix G to Sub-Chapter B, as appearing or as may be revised in the Code of Federal Regulations, as related to the inspection of Commercial Motor Vehicles or any activity related thereto, are hereby adopted as the Regulations of the Registry of Motor Vehicles. Said regulations are applicable to trucks with a gross vehicle weight rating of over 10,000 pounds, buses transporting more than 15 passengers including the driver or any motor vehicle transporting hazardous materials in a quantity requiring placarding in accordance with the Hazardous Material Regulations of the United States Department of Transportation, parts 171 through 180 of Title 49, Code of Federal Regulations. In the event of any conflict between these regulations and any other regulations or law of the Commonwealth of Massachusetts, the stricter more stringent standard shall apply. A Certificate of Rejection shall be issued to any vehicle or trailer submitted for inspection if any of the following conditions exist:
(a) Air Brake Systems.

1. Leakage Test. Start the vehicle engine and run at fast idle until air pressure on gauge reaches cut-off point. Cut-off must occur at 90 pounds per square inch or more, or manufacturer specifications. Stop engine and observe pressure gauge. With service brakes in released position, if drop in pressure exceeds 2 PSI in one minute for a single vehicle or 3 PSI for a combination vehicle or if audible leakage is evident, the vehicle will be rejected. Start engine and allow system to reach maximum pressure. Stop engine and apply service brakes, at which time a pressure drop of 5 PSI to 15 PSI will occur and system will be stabilized. With brakes in applied position, if drop in pressure exceeds 3 PSI in one minute for a single vehicle, or 4 PSI per minute for a combination vehicle, or of audible leakage is evident, the vehicle will be rejected.

2. Low Pressure Warning Device Test. Apply service brakes repeatedly until the audible or visual low pressure indicator comes on. Reject vehicle if indicator comes on above 70 PSI or below 50 PSI or if the indicator is inoperative. A gauge indicating pressure is not deemed to be an adequate low pressure indicator.

3. Condition of Air Brake Components. During the inspection of the vehicle, the conditions of visible air brake components should be checked. The vehicle shall be rejected if tubing or hoses are cracked, chafed, or restricted or are insecurely fastened or improperly retained.

(b) Brake System.

1. Service Brakes.

   a. All brake systems are to be inspected in accordance with the manufacturer(s) recommended procedures. Absence of braking action of any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge, S-cam, cam, or disc brake).

   b. Missing or broken mechanical components including shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.

   c. Loose brake components including air chamber spiders, and cam shaft support brackets.

   d. Audible air leak at brake chamber (example-ruptured diaphragm, loose chamber clamp, etc.).

   e. Re-adjustment limits. The maximum stroke at which brakes should be readjusted is given below. Any brake 1/4" or more past the re-adjustment limit or any two brakes at the readjustment limit or less than 1/4" beyond the re-adjustment limit shall be cause for rejection. Stroke shall be measured with the engine off and reservoir pressure of 80 to 90 PSI with brakes fully applied.
### BOLT TYPE BRAKE CHAMBER DATA

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<tr>
<td>12</td>
<td>12</td>
<td>4 13/16</td>
<td>1 1/2</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>5 13/32</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>5 13/16</td>
<td>2</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>6 13/32</td>
<td>2</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>7 1/16</td>
<td>2 1/4</td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>7 5/8</td>
<td>2 3/4</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>8 7/8</td>
<td>3</td>
</tr>
</tbody>
</table>

### CLAMP TYPE BRAKE CHAMBER DATA

<table>
<thead>
<tr>
<th>Type</th>
<th>Effective area (sq. in.)</th>
<th>Outside dia. (in.)</th>
<th>Maximum stroke at which brakes should be readjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
<td>4 ½</td>
<td>1 1/4</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>5 3/4</td>
<td>1 3/8</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>5 11/16</td>
<td>1 3/8</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>6 3/8</td>
<td>1 3/4</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>6 24/32</td>
<td>1 3/4</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>7 7/32</td>
<td>1 3/4 (Note: 2&quot; for long stroke design)</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>8 3/32</td>
<td>2</td>
</tr>
<tr>
<td>36</td>
<td>36</td>
<td>9</td>
<td>2 1/4</td>
</tr>
</tbody>
</table>

**WEDGE BRAKE DATA.** MOVEMENT OF THE Scribe MARK ON THE LINING SHALL NOT EXCEED 1/16 INCH.
f. Brake linings or pads.

i. Lining or pad is not firmly attached to the shoe;

ii. Saturated with oil, grease, or brake fluid; or

iii. Non-steering axles: Lining with a thickness less than 1/4 inch at the shoe center for air drum brakes, 1/16 inch or less at the shoe center for hydraulic and electric drum brakes, and less than 1/8 inch for air disc brakes.

iv. Steering axles: Lining with a thickness less than 3/16 inch at the shoe center for drum brakes, less than 1/8 inch for air disc brakes and 1/16 inch or less for hydraulic disc and electric brakes.

g. Missing brake on any axle required to have brakes.

h. Mismatch across any power unit steering axle of:

i. Air chamber sizes.

ii. Slack adjuster length.

2. Parking Brake System. No brakes on the vehicle or combination are applied upon actuation of the parking brake control, including driveline hand controlled parking brakes. The inspector shall operate the vehicle to test the parking and service brake. The parking brake on all vehicles shall be tested by sufficiently accelerating the motor with the vehicle in the lowest forward gear against the brake in the applied position. The vehicle will be rejected if the parking brake will not hold. The service brakes will be tested at a speed of between four and eight MPH. Service brakes must be reasonably equalized so that the vehicle does not pull noticeably to either side when applied. A test with the brake meter shall be made at a speed of 15 to 25 MPH in all questionable cases. Service and parking brakes shall be adequate to stop the vehicle from a speed of 20 MPH in not more than the following distances

<table>
<thead>
<tr>
<th>Service (foot) Brake</th>
<th>Pleasure Vehicles</th>
<th>30 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trucks and Buses</td>
<td>40 feet</td>
</tr>
<tr>
<td>Parking (hand) Brake</td>
<td>All Vehicles</td>
<td>80 feet</td>
</tr>
</tbody>
</table>

3. Brake Drums or Rotors.

a. With any external crack or cracks that open upon brake application (do not confuse short hairline heat check cracks with flexural cracks).

b. Any portion of the drum or rotor missing or in danger of falling away.
4. Brake Hose.
   a. Hose with any damage extending through the outer reinforcement ply. (Rubber impregnated fabric cover is not a reinforcement ply).

   (Thermoplastic nylon may have braid reinforcement or color difference between cover and inner tube. Exposure of second color is cause for rejection.)

   b. Bulge or swelling when air pressure is applied.

   c. Any audible leaks.

   d. Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube.

   e. Air hose cracked, broken or crimped.

5. Brake Tubing.
   a. Any audible leak.

   b. Tubing cracked, damaged by heat, broken or crimped.

6. Low Pressure Warning Device missing, inoperative, or does not operate at 55 PSI and below, or 1/2 the governor cut-out pressure, whichever is less.

7. Tractor Protection Valve. Inoperative or missing tractor protection valve(s) on power unit.

8. Air Compressor.
   a. Compressor drive belts in condition of impending or probable failure.

   b. Loose compressor mounting bolts.

   c. Cracked, broken or loose pulley.

   d. Cracked or broken mounting brackets, braces or adapters.

   a. Absence of braking action on any wheel required to have brakes.

   b. Missing or inoperative breakaway braking device.

a. Master cylinder less than 1/4 full.

b. No pedal reserve with engine running except by pumping pedal.

c. Power assist unit fails to operate.

d. Seeping or swelling brake hose(s) under application of pressure.

e. Missing or inoperative check valve.

f. Has any visually observed leaking hydraulic fluid in the brake system.

g. Has hydraulic hose(s) abraded (chafed) through outer cover to fabric layer.

h. Fluid lines or connections leaking, restricted, crimped, cracked or broken.

i. Brake failure or low fluid warning light on and/or inoperative.

11. Vacuum Systems. Any vacuum system which:

a. Has insufficient vacuum reserve to permit one full brake application after engine is shut off.

b. Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, broken or has collapse of vacuum hose(s) when vacuum is applied.

c. Lacks an operative low-vacuum warning device as required.

(a) Coupling Devices.

1. Fifth Wheels.

   a. Mounting to frame.

      i. Any fasteners missing or ineffective.

      ii. Any movement between mounting components.

      iii. Any mounting angle iron cracked or broken.

   b. Mounting plates and pivot brackets.

      i. Any fasteners missing or effective.

      ii. Any welds or parent metal cracked.

      iii. More than 3/8 inch horizontal movement between pivot bracket pin and bracket.
iv. Pivot bracket pin missing or not secured.

c. Sliders.

   i. Any latching fasteners missing or ineffective.
   ii. Any fore or aft stop missing or not securely attached.
   iii. Movement more than 3/8 inch between slider bracket and slider base.
   iv. Any slider component cracked in parent metal or weld.

d. Lower coupler.

   i. Horizontal movement between the upper and lower fifth wheel halves exceeds 1/2 inch.
   ii. Operating handle not in closed or locked position.
   iii. Kingpin not properly engaged.
   iv. Separation between upper and lower coupler allowing light to show through from side to side.
   v. Cracks in the fifth wheel plate, excepting cracks in fifth wheel approach ramps and casting shrinkage cracks in the ribs of the body of a cast fifth wheel.
   vi. Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.

2. Pintle Hooks.

   a. Mounting to frame.

      i. Any missing or ineffective fasteners (a fastener is not considered missing if there is an empty hole in the device but no corresponding hole in the frame or vice versa).

      ii. Mounting surface cracks extending from point of attachment (e.g. cracks in the frame at mounting bolt holes.).

      iii. Loose mounting.

      iv. Frame cross member providing pintle hook attachment cracked.

   b. Integrity.

      i. Cracks anywhere in pintle hook assembly.
ii. Any welded repairs to the pintle hook.

iii. Any part of the horn section reduced by more than 20%.

iv. Latch insecure.

3. Drawbar/Towbar Eye.

a. Mounting.

i. Any cracks in attachment welds.

ii. Any missing or ineffective fasteners.

b. Integrity.

i. Any cracks.

ii. Any part of the eye reduced by more than 20%.

4. Drawbar/Towbar Tongue.

a. Slider (power or manual).

i. Ineffective latching mechanism.

ii. Missing or ineffective stop.

iii. Movement of more than 1/4 inch between slider and housing.

iv. Any leaking, air or hydraulic cylinders, hoses, or chambers (other than slight oil weeping normal with hydraulic seals).

b. Integrity.

i. Any cracks.

ii. Movement of 1/4 inch between subframe and drawbar at point of attachment.

5. Safety Devices.

a. Safety devices missing.

b. Unattached or incapable of secure attachment.

c. Chains and hooks.
i. Worn to the extent of a measurable reduction in link cross section.

ii. Improper repairs including welding, wire, small bolts, rope and tape.

d. Cable.

i. Kinked or broken cable strands.

ii. Improper clamps or clamping.


a. Method of attachment.

i. Any missing or ineffective fasteners.

ii. Loose mountings.

iii. Any cracks or breaks in a stress or load bearing member.

iv. Horizontal movement between upper and lower saddle-mount halves exceeds 1/4 inch.

(b) Exhaust System

1. Any exhaust system determined to be leaking at a point forward of or directly below the driver/sleeper compartment.

2. A bus exhaust system leaking or discharging to the atmosphere:

a. Gasoline powered. In excess of six inches forward of the rearmost part of the bus. See 540 CMR 7.00 for school buses.

b. Other than gasoline powered. In excess of 15 inches forward of the rear most part of the bus. See 540 CMR 7.00 for school buses

c. Other than gasoline powered forward of a door or window designed to be opened, excepting emergency exits.

3. No part of the exhaust system of any motor vehicle shall be so located as would be likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle.

4. The exhaust system, exhaust manifold(s), exhaust pipe(s), muffler(s), and tailpipe(s), if designed to be so equipped, shall be tight and free of leaks. System components shall be securely fastened with fasteners in place and undamaged.
5. A gas or diesel vehicle will be rejected if, at normal operating temperature, and at any constant speed over 15 MPH. (approximately 1,000 to 1200 RPM's) visible black or blue exhaust emissions are evident.

(c) Fuel System

1. A fuel system with a visible leak at any point.

2. A fuel tank filler cap missing.

3. A fuel tank not securely attached to the motor vehicle by reason of loose, broken or missing mounting bolts or brackets (some fuel tanks use springs or rubber bushings to permit movement).

(d) Lighting Devices. All lighting devices and reflectors required by Section 393 shall be operable (See Part 393 in Reference Section).

(e) Safe Loading

1. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall into the roadway.

2. Protection against shifting cargo. Any vehicle without a front-end structure or equivalent device as required.

(f) Steering Mechanism

1. Steering Wheel Free Play. The engine must be running on vehicles equipped with power steering.

<table>
<thead>
<tr>
<th>Steering Wheel Diameter</th>
<th>Manual Steering System</th>
<th>Power Steering System</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot;</td>
<td>2&quot;</td>
<td>4 1/2&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>2 1/4&quot;</td>
<td>4 3/4&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>2 1/2&quot;</td>
<td>5 1/4&quot;</td>
</tr>
<tr>
<td>22&quot;</td>
<td>2 3/4&quot;</td>
<td>5 3/4&quot;</td>
</tr>
</tbody>
</table>

2. Steering Column.

a. Any absence or looseness of U-bolt(s) or positioning part(s).

b. Worn, faulty or obviously repair welded universal joint(s).

c. Steering wheel not properly secured.

3. Front Axle Beam and All Steering Components Other Than Steering Column.
a. Any crack(s) in gear box or mounting brackets.

b. Any obvious weld or repair(s).

4. Steering Gear Box

a. Any mounting bolts lose or missing.

b. Any crack(s) in gear box or mounting brackets.

5. Pitman Arm. Any looseness of the pitman arm on the steering gear output shaft.


7. Ball and Socket Joints.

a. Any movement under steering load of a stud nut.

b. Any motion, other than rotational between any linkage member and its attachment point of more than 1/8 inch.

8. Tie Rods and Drag Links.

a. Loose clamp(s) or clamp bolt(s) on tie rods or drag links.

b. Any looseness in any threaded joint.

9. Nuts. Nut(s) loose or missing on tie rods, pitman arm, drag link, steering arm or tie rod arm.

10. Steering System. Any modification or other condition that interferes with free movement of any steering component.

11. King Pin. Reject Vehicle: if measured movement at top or bottom of tire is greater than:

<table>
<thead>
<tr>
<th>Wheel Size</th>
<th>16 inches or less</th>
<th>1/4&quot; (6.5mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17 to 18 inches</td>
<td>3/8&quot; (9.5mm)</td>
</tr>
<tr>
<td></td>
<td>Over 18 inches</td>
<td>1/2&quot; (13mm)</td>
</tr>
</tbody>
</table>

KINGPIN PLAY PROCEDURE: Relative to vehicles equipped with Kingpins.

MVMA recommended procedures as noted below.

Be sure wheel bearing movement is eliminated by applying service brake during checking procedure.
Procedure: First eliminate all wheel bearing movement by applying service brake.

With front end lifted, as illustrated for inspecting wheel bearings, grasp the tire at the top and bottom and attempt to move in and out to detect looseness. A pry bar may be necessary on heavy wheels.

Measure the movement at the top or bottom of the tire at the outer circumference.

Reject vehicle if measured movement at top or bottom of tire is greater than the distances described below:

Wheel size:

16 inches or less - 1/4" (6.5mm)
17 to 18 inches - 3/8" (9.5mm)
Over 18 inches - 1/2" (13mm)

The registration of the vehicle will be suspended if thrust bearings or kingpin lock or draw keys are missing or if examination of the vehicle reveals that steering knuckles are excessively worn or cracked. Measured movement in excess of the following amounts will result in the suspension of the vehicle registration:

16 inches or less - 1/2" (13.0 mm)
17 to 18 inches - 3/4" (19.0 mm)
Over 18 inches - 1.0" (26.0 mm)

(i) Suspension System

1. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position. (After a turn, lateral axle displacement is normal with some suspensions. Forward or rearward operation in a straight line will cause the axle to return to alignment.)

2. Spring Assembly.

   a. Any leaves in a leaf spring assembly broken or missing.

   b. Any broken main leaf in a leaf spring assembly, (include assembly with more than one main spring).

   c. Coil spring broken.
d. Rubber spring missing.

e. One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum or frame.

f. Broken torsion bar spring in a torsion bar suspension.

g. Deflated air suspension, i.e., system failure, leak, etc.

3. Torque, Radius, or Tracking Components. Any part of a torque, radius or tracking component assembly or any part used for attaching the same to the vehicle frame or axle that is cracked, loose, broken or missing. (Does not apply to loose bushings in torque or track rods).

4. Shocks: Any broken, bent, missing shock absorbers or suspension springs.

(j) Frame

1. Frame Members.

a. Any cracked, broken, loose, or sagging frame member.

b. Any loose or missing fasteners including fasteners attaching functional component such as engine, transmission, steering gear, suspension, body parts, and fifth wheel.

2. Tire and Wheel Clearance. Any condition, including loading, that causes the body or frame to be in contact with a tire or any part of the wheel assemblies.

3. Adjustable axle assemblies (Sliding Subframes). Adjustable axle assembly with locking pins missing or not engaged.

(k) Tires.

1. Any tire on any steering axle of a power unit.

a. With less than 4/32 inch tread when measured at any point on a major tread groove.

b. Has body ply or belt material exposed through the tread or sidewall.

c. Has any tread or sidewall separation.

d. Has a cut where the ply or belt material is exposed.

e. Is labeled "Not For Highway Use" or displaying other marking which would exclude use on steering axle (except for farm vehicles, implements of husbandry, and off-road equipment is used on highway at restricted speeds).
f. A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word "radial" embossed in metal stems, or the word "radial" molded in rubber stems.

g. Mixing bias and radial tires on the same axle

h. Tire flap protrudes through valve slot in rim and touches stem.

i. Re-grooved tires on buses, trucks and truck tractors, except for trucks and truck tractors equipped with front tires with a load carrying capacity of less than that of 8.25-20 8 ply-rating tires.

j. Boot, blowout patch or other ply repair.

k. Weight carried exceeds tire load limit. This includes overloading tire resulting from low air pressure.

l. Tire is flat or has noticeable (e.g., can be heard or felt) leak.

m. Any bus equipped with recapped or re-treaded tire(s).

n. So mounted or inflated that it comes in contact with any part of the vehicle.

o. Tire size shall be the same on each side of the front and/or rear axle. Tire size may be different between front and rear axles as determined by vehicle manufacturer.

2. All tires other than those found on the steering axle of a power unit:

a. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low pressure.

b. Tire flat or has noticeable (e.g., can be heard or felt) leak.

c. Has body ply or belt material exposed through the tread or sidewall.

d. Has any tread or sidewall separation.

e. Has a cut where ply or belt material is exposed.

f. So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate.)

  g. Is labeled "Not For Highway Use" or displaying other marking which would exclude use on steering axle (except for farm vehicles, implements of husbandry, and if off-road equipment is used on highway at restricted speeds).

  h. With less that 2/32 inch tread when measured at any point on a major tread groove.
i. Tire size shall be the same on each side of the front and/or rear axle. Tire size may be
different between front and rear axles as determined by vehicle manufacturer.

(l) Wheels and Rims

1. Lock or Side Ring. Bent, broken, cracked, improperly seated, sprung or mismatched
ring(s).

2. Wheels and Rims. Cracked or broken or has elongated bolt holes.

3. Fasteners (both spoke and disc wheels). Any loose, missing, broken, cracked, stripped or
otherwise ineffective fasteners.


a. Any cracks in welds attaching disc wheel disc to rim.

b. Any cracks in welds attaching tubeless demountable rim to adapter.

c. Any welded repair on aluminum wheel(s) on a steering axle.

d. Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the
steering axle.

(m) Windshield Glazing

1. Windshield Critical Viewing Area is the area covered by the sweep of the wiper(s)
exclusive of the outer two inches within the perimeter of the wiper(s) sweep, provided by the
vehicle manufacturer.

2. Windshields having any of the following defects will be rejected:

a. Any broken glass with sharp or jagged edges inside or outside.

b. Any stone bruise, star break, or bulls eye, damage in excess of one inch in diameter within
the critical viewing area or larger than two inches outside the critical viewing areas, or
multiple such damage.

c. Single line cracks which extend more than three inches into the critical viewing area.

d. Multiple cracks, having one or more which extends into the critical viewing area.

e. Wiper scrape(s) in excess of 1/4 inch wide within the critical viewing area.

f. Clouding extending more than three inches within the perimeter of the exposed glass.
g. No poster, sticker decal, etc. shall be attached to the windshield in such a manner so as to obstruct the vision of the operator.

h. Any tinting or reflective material applied by brush, spray, or adhesive which is below the uppermost six inches of the windshield or which may encroach upon the driver's direct forward viewing area. (All such tinting provided by the original manufacturer in compliance with applicable Federal Motor Vehicle Safety Standards is acceptable.)

i. Window Tinting. Aftermarket tinting or alterations that do not change the transparency beyond that of the standards set forth in 49 Code of Federal Regulations Part 571.205 is acceptable on windows immediately adjacent to the operator and front passenger seat and the windows immediately to the rear of the operator and front passenger seat. The rear window may also be so tinted provided the vehicle is equipped with two outside rear view mirrors. The windshield may only be tinted down to the AS-1 line usually located in the uppermost six inches of the windshield. 540 CMR 4.05(14)(i.) shall not apply to the following:

a. All window tinting as provided by the original manufacturer that is in compliance with applicable Federal Motor Vehicle Safety Standards.

b. Authorized vehicles used to transport K-9 teams.

c. Vehicles registered out of state.

d. Vehicles for which a medical exemption has been issued by the Registry of Motor Vehicles.

e. All windows to the rear of the operator's seat on vehicles used for public livery, except taxicabs.

(n) Windshield Wipers

1. Any power unit that has an inoperative wiper, or missing or damaged parts that render it ineffective.

2. Test for proper operation. If the vehicle was equipped with two wipers as furnished by the manufacturer, both must be maintained in good working order. Wiper blades must properly contact the windshield, be of the same length as those furnished as original equipment and the rubber elements must be free from damage or tears.

3. If the vehicle was equipped with windshield cleaner equipment as furnished by the manufacturer, units must be maintained in good working order.

(o) Fuel Tank Cap Visual Check. The vehicle shall fail the gas cap visual check if the cap is missing, defective or does not properly fit the vehicle.
4.07: Issuance of Certificates of Inspection, Rejection, and Waiver Procedure

   (1) General Provisions.

   (a) A separate and distinct charge, as established by the Secretary of Administration and Finance, shall be made for each inspection required in accordance with the provisions of 540 CMR 4.00 and the provisions of M.G.L. c. 90.

   (b) All certificates of inspection or rejection shall be issued in sequential order from lowest to highest serial number.

   (c) All Certificates of Inspection or Rejection shall be issued and affixed to the motor vehicle in accordance with the policies established by the Registrar. All Certificates of Inspection or Rejection for Trailers will be issued in accordance with the Registrar's policies relating thereto.

All vehicles submitted for inspection displaying temporary plates or dealer plates, (as defined in 540 CMR 4.02) which are not required to carry a certificate of registration, shall have all digits of vehicle identification numbers recorded in the workstation.

Certificate of Inspection. Any motor vehicle subject to Safety Inspection only, Combined Safety and Emissions Inspection, or Commercial Motor Vehicle Safety and Emissions Inspection, which, after inspection, is found to be in compliance with all Safety or Safety and Emissions Inspection requirements will be issued a Certificate of Inspection, valid for a period of time to be determined by the Registrar in accordance with the policies established by the Registrar and Commissioner.

   (3) Certificate of Rejection.

Any motor vehicle submitted for inspection that fails to meet all applicable inspection requirements shall be issued a Certificate of Rejection, in accordance with the Registrar and Commissioner's policy relating thereto.

   (a) A Certificate of Rejection authorizes the operation of a motor vehicle for a period of 60 calendar days after inspection, 20 days for motorcycles, provided that all safety related equipment defect(s) have been corrected prior to continued operation. Safety related equipment defects are items of inspection exclusive of emissions inspection items. 7D vehicles must display a current 7D inspection sticker in order to transport pupils.

A Certificate of Rejection shall entitle the owner or operator to one free re-inspection, provided that the vehicle is submitted for re-inspection at the same inspection station which issued the Certificate of Rejection within 60 calendar days for motor vehicles and 20 days for motorcycles and 7D vehicles after the date of issue.

   (4) Suspension of Registration. Failure to meet these requirements or obtain a waiver under 540 CMR 4.00 may result in the suspension of the motor vehicle's registration pursuant to the procedures set forth in M.G.L. c. 90, § 22.
(a) Commercial Motor Vehicle Certificate of Rejection Procedures.

1. Any commercial motor vehicle submitted for inspection that fails to meet the applicable Safety and Emissions inspection requirements shall be issued a Certificate of Rejection provided the safety defects are not identified and listed in the current North American Uniform Vehicle Out of Service Criteria as being an out of service condition or restricted service condition.

2. Upon inspecting a Commercial Motor Vehicle, if any item is found to not comply with 540 CMR 4.00, the inspector shall nevertheless complete the inspection of all other required items. The inspector shall provide a list of the items for which the vehicle is being rejected and advise the vehicle owner, custodian and/or operator of the violation(s) noted.

Copies of all rejection slips shall be kept at the place of inspection and/or stored electronically for one year from the date of inspection. Copies of all such rejection slips or data shall be made available for inspection by the Registrar or any of his authorized personnel. The rejection slip shall contain the following information:

a. Name of inspection station and station number.

b. Date of inspection and signature of the inspector.

c. Vehicle registration number, make, year and vehicle identification number.

d. Reason for rejection

e. Any other information that may be required by the Registrar.

3. Out of Service Commercial Motor Vehicle. If in the course of inspection of a Commercial Motor Vehicle or trailer, an inspector finds an unsafe vehicle, that has a safety hazard as defined in the current North American Uniform Vehicle Out of Service Criteria, said inspector shall immediately notify the Registry of Motor Vehicles by mailing that same day, the rejection slip noting the out of service violations. Said owner or custodian of said vehicle that was rejected by reasons of having safety defects of an out of service nature shall not be operated until all necessary repairs have been made. A Commercial Motor Vehicle placed out of service may be operated to the nearest repair facility if in the opinion of the inspector, it may be safe to do so. This operation is restricted to a five day period from the date of rejection. Said inspector shall so state on the rejection slip, in the appropriate space, if the vehicle is safe to move for the purpose of repairs. No commercial motor vehicle may be operated with a rejection certificate with an out of service condition under any circumstances unless it is being moved for the purpose of repairs. Any person who operates or any owner or custodian, who permits a commercial motor vehicle to be operated in an out of service condition except for the movement of said vehicle for repairs, shall be punished by a fine as provided in M.G.L. c. 90, § 20.

4. Procedure For Waiver. A motorist may apply for a waiver of emission inspection standards in accordance with the provisions of 310 CMR 60.02(11).
(5) Inspection Within Seven Days of Purchase (Lemon Aid Law).

(a) A Certificate of Rejection must be issued to the new owner of a motor vehicle within seven days of the date of purchase in order to permit the new owner to void the sale of said vehicle or to require the vendor to make repairs pursuant to the specified conditions enumerated in M.G.L. c. 90, § 7N.

(b) In order to invoke M.G.L. c. 90, § 7N, Certificates of Rejection issued to motor vehicle owner/operators, who have submitted the motor vehicle for inspection within seven days of the date of purchase, shall, upon request of the owner/operator, be provided a written statement, issued by an authorized agent of the inspection station, stating the reasons why the motor vehicle failed to pass the Safety or Combined Safety and Emissions Inspection and an estimate of the cost necessary for repairs in accordance with the provisions of M.G.L. c. 90, § 7N.

4.08: Licensure of Inspection Stations


(a) Applications. Effective until May 1, 2008 applications for a license to operate a Class LG, LD, LGD, F, FR, H, HD, HG, M, R, V inspection station, and beginning May 1, 2008, applications for a license to operate, beginning October 1, 2008, a Class A, B, C, D, E, F and M inspection station, with any endorsements as appropriate, or other inspection license, as may be issued by the Registrar, may be filed with the Registrar by a person engaged in the business of servicing, maintaining or repairing motor vehicles or their components. An applicant for a class M inspection station license must be a Motorcycle Dealer licensed pursuant to M.G.L. c. 140, § 58 or a motorcycle repairman who possesses a license required by law to carry on a repair business and who has received factory training or equivalent training as required by the Registrar.

1. Selection Criteria. Once the Inspection Station Network is at capacity, as determined by the Registrar, stations wishing to become licensed shall be placed on a waiting list established and maintained by the Registrar. Prospective stations shall be selected for licensure from any such list as established by the Registrar as Inspection Station Network capacity warrants. Stations shall first be selected for licensure in accordance with a determination of geographic need as determined by the Registrar in the exercise of her sole discretion. Network Inspection Station geographic need shall be evaluated on the basis of criteria including, but not limited to, factors such as the density of the population of motor vehicle owners in a geographic area and distance between existing licensed inspection stations as measured by either miles, travel time or both miles and travel time. If Inspection Station Network geographic needs are determined to be adequately met by the Registrar, then inspection station licenses shall be issued in accordance with placement on a waiting list of applicants for inspection station licenses compiled in chronological order by date of submission of application for licensure.

(b) Information Required. Each application for licensure shall contain such information as the Registrar shall require on the application form and be accompanied by a business certificate issued to the applicant by the city or town in which the premises is located.
(c) Application and License Fees. A non-refundable application fee of $50.00 made payable by cash, certified check or money order to the Registry of Motor Vehicles shall accompany each application. When an application is approved by the Registrar, and upon the payment of an additional fee of $100.00, the applicant shall be granted a license which shall be valid for a period of one year from the date of issuance. The annual renewal fee shall be determined by the Secretary of Administration and Finance. An applicant applying for a license at more than one location will be required to file a separate application for each location. A licensee may change his station location upon payment of a $50.00 application fee and the approval of the new location. Licenses are not transferable. In the event of any change of ownership or interest in the business, an application for a new license must be filed. The Registrar must be notified immediately by the licensee in the event that arrangements are made for the transfer of the business to another person. Upon the transfer of ownership or termination of the business, the station license, all unused Certificates of Inspection, Rejection, and records required to be kept in accordance with the provisions of 540 CMR 4.00 shall be surrendered and returned to the Registry of Motor Vehicles forthwith. Unused Certificates of Inspection will be rebated.

(d) Certificate of License and Display Requirements. The licensee shall conspicuously display the numbered class license issued by the Registrar in an area that is reserved for inspection purposes. In case of loss, mutilation or destruction of the license, the Registrar shall issue a duplicate license upon proper proof thereof and payment of a fee of $25.00.

(e) Requirements to Purchase and Security of Certificates of Inspection. Each licensee shall maintain adequate security, acceptable to the Registrar, which will prevent the misappropriation of Certificates of Inspection or Rejection. Missing or stolen Certificates of Inspection or Rejection must be reported forthwith to the Registry of Motor Vehicles and local law enforcement.

(f) Each Licensee shall maintain, if required, an adequate supply of Certificates of Inspection, test authorizations, if required, and sticker and sticker stock. to assure that motorists will not be denied inspections, or unnecessarily inconvenienced. Said documents shall be purchased from the Registry of Motor Vehicles or its designated agent in accordance with the applicable policies established by the Registrar and may not be sold or transferred from one station to another.

(g) Requirements for Personnel Who Administer Inspections. Inspections must be performed by the licensee or permanent employees of the licensee who are in possession of a valid motor vehicle operator license. A person who performs safety inspections shall be licensed by the Registrar. That license shall be renewed annually. A permanent employee shall, for purposes of 540 CMR 4.00, be defined as a person regularly employed by the licensed inspection station for a minimum of 20 hours per week. Persons performing inspections must be able to demonstrate their proficiency in inspecting motor vehicles and in operating, calibrating, and maintaining items or equipment required for the inspection of motor vehicles, to personnel authorized by the Registrar, the Massachusetts Commissioner of the Department of Environmental Protection assigned to program administration and enforcement and the Network Contractor. Any person conducting a Class M inspection must provide proof that he has received either factory training, or training approved by the Registrar. The inspector must have a valid motorcycle license.
(h) Requirements For Personnel Who Administer Commercial Motor Vehicle Inspections. It shall be the licensed commercial motor vehicle inspection station's or the mobile commercial motor vehicle inspector's responsibility to ensure that the individual(s) performing an annual inspection as contained herein are qualified as follows:

1. Understands the inspection criteria set forth in Title 49 Code of Federal Regulations Parts 393 and Appendix G to Part 396 and can identify defective components;

2. Is knowledgeable of and has mastered the methods, procedures, tools and equipment used when performing an inspection; and

3. Is capable of performing an inspection by reason of experience, training, or both as follows:

   a. Successfully completed a State or Federal sponsored training program or has a certificate from a State or Canadian Province which qualifies the person to perform commercial motor vehicle safety inspections, or

   b. Have a combination of training and/or experience totaling at least one year. Such training and/or experience may consist of:

      i. Participation in a truck manufacturer-sponsored training program or similar commercial training program designed to train students in truck operation and maintenance;

      ii. Experience as a mechanic or inspector in a motor carrier commercial motor vehicle maintenance program;

      iii. Experience as a mechanic or inspector in commercial motor vehicle maintenance at a commercial garage, fleet leasing company or similar facility; or

      iv. Experience as a commercial vehicle inspector for a State, Provincial or Federal Government agency.

4. All personnel who perform any part of the actual commercial vehicle inspection shall be in possession of a valid Commercial Driver's License (CDL).

   a. Written evidence of that individual's qualifications under this section shall be retained by the commercial motor vehicle inspection station for the period during which that individual is performing annual motor vehicle inspections for the commercial motor vehicle inspection station and for one year thereafter.

   b. All Commercial Motor Vehicle Inspectors shall be subject to testing and shall be licensed by the Registrar. Said license shall be renewed annually.

5. Availability of Premises and Records to Authorized Personnel. All licensees shall record and retain records pertaining to the inspection performed in accordance with the policies and procedures established by the Registrar. Facilities, records, and equipment shall, during the licensee's normal business hours, be available at the address recorded on the Class A, B, C, D,
E, F, M License (with any additional endorsements) to enforcement personnel of the Executive Office of Transportation, Registry of Motor Vehicles, and/or Department of Environmental Protection and the Network Contractor.

(2) Facility, Equipment, and Inspection Station Requirements

(a) Promotions. No licensed inspection facility may advertise the Massachusetts vehicle safety and emissions inspection program in conjunction with any offer, promotion or discount of any product, service or commodity to any Customer. Nothing in the preceding sentence shall prohibit a licensed inspection facility from including in any advertisement that it is a licensed inspection facility.

(b) Signs. The facilities of public station Licensees should be available for the convenience of the public. Public station Licensees shall conspicuously post and display identification as a "Massachusetts Inspection Station" on a sign not less than 24” x 36”, including the station's license number and the regular hours of inspection. Hours of inspection may be posted on a separate sign. All stations performing Commercial Motor Vehicle Inspections must post their commercial motor vehicle inspection labor rate. Such signs must be removed or covered whenever inspections cannot be performed during the posted hours.

(c) Inspection Area. A specific unobstructed area approved by the Registrar within which the complete motor vehicle inspection shall be performed, must be enclosed in a building in the primary service facility of the licensees' premises. The inspection area of all classes of inspection stations except M, must be at least thirty feet in length and twelve feet in width, and said inspection area must exceed by five feet in width the width of the widest vehicle inspected. The inspection area for class M Inspections shall be 30 feet or less in length, or as determined by the Registrar. Exceptions to these standards may be provided by the Registrar or his designee in his sole discretion. All inspection stations first licensed on or after October 1, 2008 shall meet the new inspection bay size requirements. All inspection stations licensed before October 1, 2008 shall be required to meet the bay size requirements in effect at the time of licensure. Designated areas shall be suitably marked or otherwise outlined and include a smooth, level, substantial floor on which the wheels of the vehicle will stand evenly while being inspected and must be maintained in a neat manner. The Registrar, in his sole discretion, may also approve an additional specifically designated area on the licensees' premises convenient to the approved inspection bay to be used for the inspection of vehicles and/or trailers and converter dollies. Any modification of the inspection area or approved additional area must be approved by the registrar.

(d) Equipment Required.

1. General Requirements. All Inspection station licensees must possess the necessary tools and equipment, and shall maintain same in good working order, and shall possess facilities necessary for the ordinary repair and adjustment of motor vehicles or components on which inspection is required. In addition to the preceding, Licensees must be equipped with the following equipment that has been approved by the Registrar, applicable to the particular class license as noted.
a. Headlamp aiming screen or device as approved by the Registrar for Class A, B, C, D, E, F, and M licenses.

b. Dial indicator gauge. All classes except M.

c. Registry approved brake meter. All classes except M.

d. Tire tread depth gauge, marked 32nds of an inch. All classes.

e. Jack of sufficient capacity to lift the front axle of the heaviest vehicle inspected. All classes.

f. Two jack stands; with a minimum rated capacity capable of holding the vehicle to be inspected. All classes except M.

g. Inspector workstation equipment. All classes.

h. Registry of Motor Vehicles Inspection Manual. All classes.

i. Registry approved 48 inch long headlight aiming stick.

j. Registry approved tint meter for glass. All classes except M and fleet stations.

k. Air, power and phone lines or communication link to operate the inspection equipment properly.

l. A commercial motor vehicle inspection station is required to have a current copy of FMCSR Parts 390 to 397 and appendix G available for inspector use.

2. Fleet Inspection Stations. Licensees are limited to the inspection of motor vehicles owned or maintained by the licensee or other fleets.

Inspection Area. The licensed Fleet Inspection Station must provide a specific area within which the complete inspection shall be performed except where additional testing is required for brakes. The area must be in a building, enclosing an area at least 30 feet in length and twelve feet in width and said inspection area must exceed by five feet in width the width of the widest vehicle inspected except as otherwise approved by the Registrar. All fleet inspection stations first licensed on or after October 1, 2008 shall meet the new inspection bay size requirements. All inspection stations licensed before October 1, 2008 shall be required to meet the bay size requirements in effect at the time of licensure. The designated area shall be suitably marked or otherwise outlined and include a smooth, substantial level floor on which all the wheels of the longest vehicle inspected will stand evenly while being inspected. Additional adequate space must be available within the building for repairing and maintaining motor vehicles.

3. Public Commercial Motor Vehicle Inspection Facility Class C, D and E and Facilities Utilizing Services of Class F Licensees using mobile equipment. A commercial motor vehicle inspection station shall have a specific area approved by the Registrar within which the complete inspection of all
commercial motor vehicles so defined shall be performed. The area shall be a suitably marked, smooth, level, unobstructed concrete flooring. The dimensions of a public commercial motor vehicle inspection facility shall at a minimum be: a length ten feet longer than the longest single or combination commercial motor vehicle to be inspected, with a minimum of at least 45 feet in length and a minimum of at least 14 feet in width. All axles of any single or combination commercial motor vehicle inspected must be on the same flat, level flooring. The area shall be equipped to provide regulated air supply of sufficient pressure and electrical power to any non-self powered commercial motor vehicle which in combination cannot be accommodated in the designated area. The designated area shall be enclosed in a building having an entrance door of no less than 12 feet in width and 12 feet in height or as approved by the Registrar. All public commercial motor vehicle inspection facilities first licensed on or after October 1, 2008 shall meet the new inspection bay size requirements. All inspection stations licensed before October 1, 2008 shall be required to meet the bay size requirements in effect at the time of licensure.

(3) Revocation, Suspension or Denial of Licenses.

(a) The Registrar may, after the applicant, licensee or person licensed by the Registrar to perform safety inspections has been granted a hearing held at such time and place as the Registrar may prescribe and duly notice to the licensee, refuse to issue a license, suspend or revoke a license or refuse to issue the renewal of a license for any of the following causes:

1. Failure to comply with any of the Rules and Regulations or the written Policies and Procedures of the Registrar or Commissioner pertaining to License Class LG, LD, LGD, F, FR, H, HD, HG, M, R, V, A,B,C,D,E, F and M Inspection Stations.

2. Failure to inspect vehicles during posted inspection hours.

3. Failure to have on hand at all times an adequate supply of Certificates of Inspection.

4. Failure to maintain that portion of premises utilized as an inspection area in a proper manner.

5. Failure to properly maintain equipment utilized in inspections procedures.

6. Engaging in fraudulent practices or conduct during the inspection of motor vehicles.

7. The issuance of a Certificate of Inspection or Certificate of Rejection without performing the required emissions test, if applicable.

8. For any action deemed by the Registrar or Commissioner of the Department of Environmental Protection to violate the terms and public purpose of the vehicle inspection program.

(b) Mailing, by first class mail, postage prepaid, of a notice of a hearing to the last known address of a licensee or applicant, 14 days prior to the date of the hearing, shall be deemed proper notice.

(c) Second, third, and subsequent infractions shall be infractions committed within the three years immediately preceding the date of the infraction for which the Registrar orders another suspension or revocation. The total number of prior infractions, in any combination, shall determine if a second or subsequent offense exists.
(b) If the licensee appeals the Registrar's decision to revoke or suspend a license, the Registrar, upon a timely request, may allow the suspension or revocation to be stayed pending a hearing before the Motor Vehicle Board of Appeal on Motor Vehicle Liability, Policies and Bonds if said suspension is not based upon activity which would constitute a threat to the public safety.

(e) The Registry shall suspend the license of an inspector or a station for a minimum of 180 days for intentionally improperly passing a motor vehicle for the emissions test required pursuant to 310 CMR 60.02. A second or subsequent violation within three years shall result in a license revocation.

(f) Suspensions or revocations of the license of any Class LG, LD, LGD, F, FR, H, HD, HGM, R, V, A, B, C, D, E, F and M inspection station, in addition to that identified immediately above in 540 CMR 4.08(3)(e) shall be in accordance with the following chart:

SUSPENSION PERIODS FOR VIOLATIONS OF INSPECTION PROCEDURE REQUIREMENTS
(Certificates of Inspection, as used herein, includes Certificates of Rejection)

<table>
<thead>
<tr>
<th>Type of Offense</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Infraction</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Infraction</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; / Subsequent Infraction</th>
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<tbody>
<tr>
<td>1. Failure to maintain inspection bay in proper manner.</td>
<td>Up to 60 Days</td>
<td>Up to 120 Days</td>
<td>Up to 240 Days</td>
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<tr>
<td>2. Failure to maintain adequate supply of Certificates of Inspection or Rejection.</td>
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<tr>
<td>3. Failure to maintain adequate security of Certificates of Inspection and test authorizations.</td>
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<tr>
<td>4. Failure to properly keep required records or properly complete required entries on Certificate of Inspection</td>
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<tr>
<td>5. Failure to charge the established inspection fee.</td>
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<tr>
<td>6. Failure to comply with any provisions of 540 CMR 4.00 or the Registrar's written policies or procedures relating thereto not otherwise specified herein.</td>
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<tr>
<td>7. Unauthorized person performing inspection.</td>
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<tr>
<th>Type of Offense</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Infraction</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Infraction</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; / Subsequent Infraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Failure to apply Certificates of Inspection, or Rejection to vehicle as required.</td>
<td>Up to 60 Days</td>
<td>Up to 120 Days</td>
<td>Up to 260 Days</td>
</tr>
<tr>
<td>2. Issuing Certificates of Inspection without performing a complete inspection.</td>
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<td></td>
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<tr>
<td>3. Failure to perform complete inspection in designated inspection bay.</td>
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<tr>
<td>4. Failure to have on hand required equipment in proper working condition.</td>
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<tr>
<th>Type of Offense</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Infraction</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Infraction</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; / Subsequent Infraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Suggesting or requiring that unnecessary repairs or adjustments be made in order for vehicle to pass inspection.</td>
<td>Up to 180 Days</td>
<td>Up to 260 Days</td>
<td>Up to 540 Days</td>
</tr>
<tr>
<td>2. Falsification or alteration of recorded data pertaining to inspection.</td>
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</table>
1. Licensee or employee performing inspections while under the influence of liquor or drugs.  

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4.09: Licensure of Inspectors - License Application Procedures and Fees.

(1) To obtain a license to conduct motor vehicle inspections from the Registrar, a person must be trained and certified by the Registrar and DEP pursuant to 310 CMR 60.02 and 540 CMR 4.00.

(2) The applicant must provide proof of certification and a valid driver license together with a non-refundable fee which shall be established by the Secretary of Administration and Finance pursuant to M.G.L. c. 90, § 33 and 801 CMR 4.02.

(3) The fee is payable to the Registry of Motor Vehicles and shall accompany each application.

(4) When the application is approved by the Registrar, the applicant shall be granted a license which shall be valid for a period of one year from the date of issuance. The license shall be renewable annually at a fee which shall be established by the Secretary of Administration and Finance pursuant to M.G.L. c. 90, § 33 and 801 CMR 4.02.

REGULATORY AUTHORITY

540 CMR 4.00: M.G.L. c. 90, § 7A, 7V(a), (b) and (c), 7W and 31.
310 CMR 60.02: M.G.L. c. 111, § 142M
Appendix C

Section 60.02: Massachusetts Motor Vehicle Emissions Inspection and Maintenance Program

(1) Introduction.

(a) Authority 310 CMR 60.02 is promulgated by the Commissioner of the Department of Environmental Protection pursuant to G.L. c.111, §142M and G.L. c.21A, §§2(28) and 16.

(b) Headings are for convenience only and do not affect the substance of 310 CMR 60.02.

(c) Purpose. 310 CMR 60.02 establishes a program to inspect the emissions of motor vehicles and to ensure that a vehicle that fails an emissions inspection is repaired properly in a reasonable time period, the motorist obtains a waiver for the vehicle, or the vehicle’s registration is suspended in accordance with 540 CMR 4.00.

(d) Severability. Each subsection of 310 CMR 60.02 shall be deemed severable, and in the event that any subsection of 310 CMR 60.02 is held invalid, the remainder shall continue in full force and effect.

(2) Definitions.

The following words and phrases when used herein, except as otherwise required by the context, have the following meanings.

All Wheel Drive Vehicle means a motor vehicle in which all four wheels are constantly and automatically connected to the drive train.

Assembled Vehicle means a unique vehicle constructed from parts of other motor vehicles.

Certified Configuration means the constituent parts of a motor vehicle necessary to maintain the vehicle in conformance with any approval or order issued by the U.S. Environmental Protection Agency or the California Air Resources Board certifying the vehicle as meeting applicable emissions standards.

Commissioner means the commissioner of the Department of Environmental Protection or his or her designee.

Cutpoint means the motor vehicle emissions level above which a vehicle fails an emissions inspection and at or below which a vehicle passes an emissions inspection.

Data Link Connector means the connector where diagnostic scan tools interface with the vehicle's on-board diagnostic system.

Department means the Massachusetts Department of Environmental Protection.

Dynamometer means a device which applies a load to a vehicle's drive wheels during an emissions inspection while the vehicle is being operated in a stationary and secure position to simulate actual driving conditions.

Diagnostic trouble code means a code stored in the OBD system indicating the reason the malfunction indicator light is (or was) illuminated.

Diesel Engine means an engine using a compression ignition thermodynamic cycle.

Diesel Vehicle means a vehicle powered by a diesel engine.

Emission control system means any device or combination of parts designed by the manufacturer to control the emissions of a motor vehicle.
**Emissions Certification Category** means the category of vehicles certified to the same emissions standard within a vehicle class.

**Emissions Inspection** or **Inspection** means the procedures specified by the Department that determine whether a vehicle meets emissions inspection standards provided in 310 CMR 60.02(11) or 310 CMR 60.02(12).

**Emission Repair** means repair of a motor vehicle for the purpose of such vehicle passing or attempting to pass an emissions inspection.

**Glider Kit** means a vehicle body, including cab, which is placed upon the chassis with its original drive train, of a vehicle with a GVWR of more than 10,000 pounds that changes the function or capacity of the original chassis, and which creates a need for a change to the VIN because the cab has been replaced. Modifications to the original chassis may be necessary to allow installation of the glider kit.

**Gross Vehicle Weight Rating (GVWR)** means the maximum loaded weight for which the vehicle is designed, as specified by the vehicle manufacturer.

**Heavy Duty Diesel Vehicle** means a motor vehicle with a GVWR greater than 14,000 pounds, equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Heavy Duty Nondiesel Vehicle** means a motor vehicle with a GVWR greater than 14,000 pounds, not equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Initial Inspection** means the first inspection of a vehicle under 310 CMR 60.02 or any subsequent inspection where the vehicle passed the previous inspection, received a waiver, or received an economic hardship failure repair extension.

**Inspection** means the definition for emissions inspection.

**Inspection Certificate** means a written statement indicating (1) that the required inspection for a motor vehicle has been performed and the motor vehicle inspected has passed or failed said inspection or (2) that the motor vehicle is exempt from the inspection. Said certificate shall be in a form prescribed by the Registrar and the Commissioner.

**Inspection Station** means a facility that is licensed by the Registry to conduct motor vehicle safety and emissions inspections.

**Inspection Fee** means the fee established by the Commonwealth and paid by the motorist for a motor vehicle inspection pursuant G.L. c.7, §3B.

**Inspector** means any properly trained person with a valid certification from the Department and licensed by the Registry to perform motor vehicle safety and emissions inspections.

**Kit Vehicle** means a unique vehicle or a replica of any vehicle, the production volume of which is less than 500 vehicles per year.

**Light-duty Diesel Vehicle** means a vehicle with a GVWR of 8,500 pounds or less, equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Light-duty Nondiesel Vehicle** means a vehicle with a GVWR of 8,500 pounds or less, not equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Malfunction indicator light** means the instrument panel light used by the OBD system to notify the vehicle operator of an emissions related problem.
Medium-Duty Diesel Vehicle means a vehicle with a GVWR greater than 8,500 and less than or equal to 14,000 pounds, equipped with a diesel engine, and operating on any fuel or combination of fuels.

Medium-Duty Nondiesel Vehicle means a vehicle with a GVWR greater than 8,500 and less than or equal to 14,000 pounds, not equipped with a diesel engine, and operating on any fuel or combination of fuels.

Model year means the vehicle manufacturer's annual production period for each engine family which includes January one of a calendar year or, if the manufacturer has no annual production period for the engine family, the year in which the vehicle was manufactured. If a motor vehicle is manufactured in two or more states, the model year shall be determined by the date on which the chassis is completed.

Motor Vehicle or Vehicle means any equipment or mechanical device propelled primarily on land by power other than muscular power, including passenger vehicles and trucks operating on any fuel type. "Motor vehicle" or "vehicle" does not mean railroad or railway engines or cars, vehicles operated by the system known as trolley motor or trackless trolley, vehicles used primarily for off roadway use such as construction and farm equipment, or devices used for domestic purposes such as a lawnmower or snowblower.

Motor Vehicle Inspection and Maintenance Program means the program for the inspection and repair of motor vehicles conducted in accordance with the combined emissions and safety regulations established by the Department and the Registry pursuant 310 CMR 60.02 and 540 CMR 4.00, respectively.

Motorist means the person in control of a vehicle subject to the motor vehicle inspection and maintenance program.

New Vehicle means a motor vehicle to which the equitable or legal title has never been transferred to an ultimate purchaser.

On-board Diagnostic System (OBD system) means a system, as installed and programmed by the original equipment manufacturer or its designee, or by a vendor recognized or authorized by the U.S. Environmental Protection Agency or the California Air Resources Board or the original equipment manufacturer to install or program such system according to the requirements of the U.S. Environmental Protection Agency or the California Air Resources Board, of vehicle components and condition monitors and sensors controlled by an on-board computer running software designed to signal the motorist when a problem is detected with an emissions control system or component, or with the on-board diagnostic system.

On-board Diagnostic Test (OBD test) means an assessment of the condition of a vehicle’s emissions control system, including the vehicle’s OBD system, pursuant to Department inspection procedures established pursuant to 310 CMR 60.02, including workstation software prompts.

Opacity Test means an emissions test of a diesel vehicle’s exhaust performed by measuring the density of the smoke that the vehicle emits. Such test may be performed while the vehicle is under load on a dynamometer according to Department-approved inspection procedures.

Original Equipment Manufacturer means the entity that originally manufactured the motor vehicle or motor vehicle engine prior to sale to the ultimate purchaser.

Person means an individual, agency or other government entity, corporation, partnership, association, or similar entity.

Readiness codes means the codes stored by a vehicle’s OBD system that indicate whether a vehicle’s OBD system has been able to complete its checks for proper functioning of the vehicle’s emissions-related components and systems.

Registered Repair Technician means any person registered with the Department who meets the Department’s standards for registration.
Registrant means the person to whom a certification of registration is issued pursuant to 540 CMR 2.00 et seq.

Registrar means the Registrar of the Registry of Motor Vehicles.

Registry means the Registry of Motor Vehicles.

Reinspection means any emissions inspection performed on a motor vehicle after it has failed an emissions inspection and repair has been attempted.

Repair Form means the form provided by the inspector to the motorist whose vehicle has failed the emissions inspection to record the type and cost of emissions repairs performed on the vehicle.

SAE J1667 Opacity Test means The Snap-Acceleration Smoke Test Procedure for Heavy-Duty Diesel Powered Vehicle, 1996-02, issued by the Society of Automotive Engineers (SAE), as modified by the Department.

Tampering means the act of a person to remove or render inoperative any device or element of design installed on or in a motor vehicle in compliance with regulations under §203(a) of the federal Clean Air Act, or to cause a vehicle to operate using a fuel which the vehicle is not certified to use, or to operate on a fuel not approved or certified by the U.S. Environmental Protection Agency or the California Air Resources Board.

Transient Loaded-Mode Test means the portion of the emissions inspection administered while the vehicle is operating on a dynamometer.

Two-Speed Idle Test means an emissions measurement taken while a vehicle is operating first at idle, then while the engine is operating at 2500 revolutions per minute with the transmission in neutral, and a final time when the vehicle is again operating at idle.

Ultimate Purchaser means, with respect to a motor vehicle or motor vehicle engine, the first person who in good faith purchases or leases the motor vehicle or motor vehicle engine for purposes other than resale.

Used Motor Vehicle means a motor vehicle owned or leased by any person other than the ultimate purchaser for purposes other than resale.

Vehicle Class means a category to which a vehicle is assigned by the U.S. Environmental Protection Agency or the California Air Resources Board pursuant to their requirements for certifying the vehicle as meeting applicable emissions standards.

Vehicle Identification Number or VIN means a unique number assigned to each vehicle by the vehicle manufacturer or the Registry.

Workstation means the complete set of inspection equipment approved by the Department and required by the Registrar by or pursuant to 540 CMR 4.00 for an inspection station.

(3) Applicability

(a) The following motor vehicles are subject to emissions inspection except as otherwise provided at 310 CMR 60.02(3)(b) or (c):

1. all motor vehicles registered in Massachusetts;
2. any motor vehicle owned or operated by a federal agency in Massachusetts (regardless of whether such vehicles are registered in Massachusetts); and
3. diesel vehicles with a GVWR greater than 10,000 pounds operating on Commonwealth roads but not registered in Massachusetts.

(b) Prior to October 1, 2008, the following motor vehicles are exempt from the emissions inspection:

1. any motor vehicle with a model year earlier than 1984;
2. any motor vehicle for 24 months from the date of registration in Massachusetts after sale or lease to the ultimate purchaser (for the sale or lease of vehicles beginning with model year 1998);
3. tactical military vehicles;
4. any motor vehicle or class of motor vehicles determined by the Department to present prohibitive emissions inspection problems or to be inappropriate for emissions inspection;
5. any motor vehicle operated exclusively by electric power;
6. any motorcycle or moped; and
7. any vehicle that has been granted a waiver or exemption by the U.S. Environmental Protection Agency or the California Air Resources Board from emissions standards or equipment requirements to the extent of said waiver or exemption.

(c) Effective beginning October 1, 2008, the following motor vehicles are exempt from the emissions inspection:
1. any diesel vehicle with a model year earlier than 1984;
2. any light duty diesel vehicle with a model year earlier than 1997 or 15 or more model years old;
3. any medium duty diesel vehicle with a GVWR of not more than 10,000 pounds and with a model year earlier than 2007 or 15 or more model years old;
4. any light duty nondiesel vehicle with a model year earlier than 1996 or 15 or more model years old;
5. any medium duty nondiesel vehicle with a model year earlier than 2008 or 15 or more model years old;
6. any heavy duty nondiesel vehicle not equipped with an OBD system or 15 or more model years old;
7. any new vehicle registered first in Massachusetts for the motor vehicle inspection upon its initial registration to the ultimate purchaser, except a kit vehicle;
8. tactical military vehicles;
9. any motor vehicle or class of motor vehicles determined by the Department to present prohibitive emissions inspection problems or to be inappropriate for emissions inspection;
10. any motor vehicle operated exclusively by electric power;
11. any vehicle that has been granted a waiver or exemption by the U.S. Environmental Protection Agency or the California Air Resources Board from emissions standards or equipment requirements to the extent of said waiver or exemption; and
12. any motorcycle or moped.

(4) Scheduling of Emissions Inspections prior to October 1, 2008.
This subsection is effective prior to October 1, 2008.

(a) Motor Vehicles Registered in Massachusetts. The registrant of each motor vehicle shall obtain an emissions inspection for a motor vehicle in accordance with 310 CMR 60.02. Registrants shall submit their vehicles for inspection no later than the month and year of expiration on the previously issued inspection certificate.
1. First Initial Inspection. The registrant of each motor vehicle shall obtain an emissions inspection for that motor vehicle as part of its first motor vehicle inspection following the expiration of the exemption at 310 CMR 60.02(3)(b)2.
2. A registrant of a vehicle that failed to obtain an emissions inspection pursuant to the schedule at 310 CMR 60.02(4)(a)1. and (4)(a)4. or instead received only a safety inspection shall obtain an initial emissions inspection the next time the vehicle is submitted for a motor vehicle inspection.
3. Late Safety Inspection. Notwithstanding 310 CMR 60.02(4)(a)2. and (4)(a)4., the registrant of a motor vehicle shall obtain an initial emissions inspection for the motor vehicle if the vehicle is presented for inspection 60 days or more after the vehicle was due for a safety inspection.
4. After First Initial Inspection. The registrant of each motor vehicle shall obtain an emissions inspection for a motor vehicle every other time the vehicle is submitted for a motor vehicle inspection except in accordance with 310 CMR 60.02(4)(c), (4)(a)2. and (4)(a)3.
(b) **Initial Registration of Motor Vehicles.** For any motor vehicle first registered in Massachusetts, the motorist shall obtain an emissions inspection as part of his or her motor vehicle inspection for the vehicle within seven days from the date the vehicle is first registered in Massachusetts unless otherwise exempt in accordance with 310 CMR 60.02(3)(b).

(c) **Inspections upon Transfer.** For any used motor vehicle, the motorist shall obtain an emissions inspection as part of his or her motor vehicle inspection for the vehicle within seven days of the date on which the motor vehicle is registered in Massachusetts to the new owner unless otherwise exempt in accordance with 310 CMR 60.02(3)(b).1., 3., 4., 5., 6., or 7.

(d) **Massachusetts vehicles not located in state.** For any motor vehicle which is not garaged or operated in Massachusetts at the time that vehicle’s emissions inspection was due, a motorist may operate the vehicle for 15 days after the vehicle’s return to Massachusetts, provided said motor vehicle bears proof satisfactory to the Department of an adequate emissions inspection from another jurisdiction. The motorist shall obtain the vehicle’s initial emissions inspection within said 15 days. A motorist also may obtain an initial inspection prior to the expiration of the vehicle’s current inspection certificate.

(e) **Diesel Vehicles with a GVWR of over 10,000 pounds.** Diesel vehicles with a GVWR of over 10,000 pounds registered in Massachusetts are subject to 310 CMR 60.02(4)(a) through (d). In addition, all diesel vehicles with a GVWR of over 10,000 pounds operating on Massachusetts roads are subject to emissions testing during roadside inspections, and emissions inspection standards are applicable to emissions testing conducted during roadside inspections.

(f) **Inspections for Program Evaluation.** The Department may require a registrant to have his or her vehicle inspected upon notice from the Department for program evaluation. If the vehicle fails such inspection, the registrant may choose not to have the vehicle repaired and present the vehicle for inspection as provided at 310 CMR 60.02(4)(a).

(5) **Scheduling of Emissions Inspections effective beginning October 1, 2008.**
This subsection is effective beginning October 1, 2008.

(a) **Motor Vehicles Registered in Massachusetts.** The registrant of each motor vehicle shall obtain an emissions inspection every time the vehicle is submitted for a motor vehicle inspection in accordance with 310 CMR 60.02. Registrants shall submit their vehicles for inspection no later than the last day of the month and year of expiration on the previously issued inspection certificate.

(b) **Initial Inspection of New Kit Vehicles.** When any kit vehicle is first registered in Massachusetts, including upon sale or lease to the ultimate purchaser or completion of assembly, the registrant shall obtain a visual inspection in accordance with 310 CMR 60.02(12)(c). If the certified configuration installed in the kit vehicle is from a model year vehicle subject to an OBD test, the kit vehicle shall also receive an OBD test for the model year of the certified configuration installed in the kit vehicle.

(c) **Initial Registration of Motor Vehicles.** A motorist shall obtain an emissions inspection as part of the motor vehicle inspection for the vehicle within seven days from the date the vehicle is first registered in Massachusetts unless exempt under 310 CMR 60.02(3)(c).

(d) **Inspections upon Transfer.** For any used motor vehicle, the motorist shall obtain an emissions inspection as part of his or her motor vehicle inspection for the vehicle within seven days of the date on which the motor vehicle is registered in Massachusetts to the new owner unless exempt in accordance with 310 CMR 60.02(3)(c).

(e) **Massachusetts vehicles not located in state.** For any motor vehicle which is not garaged or operated in Massachusetts at the time that vehicle’s emissions inspection was due, a motorist may operate the vehicle for 15 days after the vehicle’s return to Massachusetts, provided said motor vehicle bears proof satisfactory to the Department of an adequate emissions inspection from another jurisdiction. The motorist shall obtain the vehicle’s initial emissions inspection within said 15 days.

(f) **Diesel Vehicles With a GVWR Greater Than 10,000 Pounds.** Diesel vehicles with a GVWR greater than 10,000 pounds registered in Massachusetts are subject to 310 CMR 60.02(5)(a) through (e), (g), and (h). In addition, all diesel vehicles with a GVWR greater than 10,000 pounds operating on Massachusetts roads are subject to emissions testing during roadside inspections, and emissions inspection standards are applicable to emissions testing conducted during roadside inspections.
(g) **Inspections for Program Evaluation.** The Department may require a registrant to have his or her vehicle inspected upon notice from the Department for program evaluation. If the vehicle fails such inspection, the registrant may choose not to have the vehicle repaired and present the vehicle for inspection as provided at 310 CMR 60.02(5)(a).

(h) A motorist may obtain an initial inspection at any time prior to the month and year of expiration on the inspection certificate previously issued where the vehicle passed the previous inspection, received a waiver, or received an economic hardship failure repair extension.

6) **Motorist Requirements.**

(a) **Inspection Documents.** When presenting a motor vehicle for an inspection, a motorist shall provide the following documents to the inspector to identify the vehicle by make, model-year, vehicle identification number, and license plate number:

1. a valid certificate of registration; and
2. if the inspection is a reinspection, a valid and completed emissions repair form.

(b) **Inspection Fee.** The motorist shall pay the inspection fee when presenting a motor vehicle for an inspection. No fee is required for an inspection that is not completed.

(c) **Inspection Failure.** If a vehicle fails an initial inspection, the motorist either shall repair the vehicle such that it passes a reinspection, or shall obtain a waiver or an economic hardship repair extension within 60 days.

(d) **Referrals.** The motorist shall present the vehicle to a location as instructed by the Registry, the Department, or via printed instructions from a workstation, for purposes related to emissions inspection.

7) **Emission Test Applicability prior to October 1, 2008.**

This subsection is effective prior to October 1, 2008.

(a) **Transient Loaded-Mode Test.** The following motor vehicles are subject to the transient loaded-mode test:

1. all motor vehicles older than model year 1996 with a GVWR of 10,000 pounds or less and operating on any fuel type, except diesel fuel; and
2. all motor vehicles model year 1996 or newer with a GVWR of 10,000 pounds or less and operating on any fuel type, except diesel fuel, that lack an on-board diagnostic system.

(b) **Two-Speed Idle Test.** All motor vehicles with a GVWR of more than 10,000 pounds and operating on any fuel type, except diesel fuel, and lacking an on-board diagnostic system are subject to the two-speed idle test. All motor vehicles, including all-wheel drive vehicles, that the Department deems unsuitable for a transient loaded-mode test as provided for in the Department-approved inspection procedures also are subject to the two-speed idle test.

(c) **On-Board Diagnostics Test.** The following motor vehicles are subject to the on-board diagnostic test in accordance with Department-approved inspection procedures:

1. all motor vehicles model year 1996 or newer operating on any fuel type, except diesel, and equipped with an on-board diagnostics system; and
2. all motor vehicles model year 1997 or newer operating on diesel fuel and equipped with an on-board diagnostics system.

3. **Alternative Test.** Any class of motor vehicles otherwise subject to the on-board diagnostics test is subject to the transient loaded-mode test, the two-speed idle test, the opacity test, or the SAE J1667 opacity test in accordance with 310 CMR 60.02(7)(a), (b), (d) and (e) if the Department determines that the vehicle class is not compatible with the then existing OBD test software or hardware. Any such vehicle class subject to an alternative test as described above also may be subject to any part of the on-board diagnostics test for which the vehicle or class of vehicles is suitable and the test hardware and software is compatible and a visual inspection of the malfunction indicator light.

(d) **Opacity Test.** All diesel vehicles with a GVWR of 10,000 pounds or less are subject to an opacity test appropriate for their weight and size as determined by the Department. Motorists with vehicles with a GVWR of 10,000 pounds or less and more than 8,500 pounds and subject to the opacity test may elect to have their vehicle tested by the SAE J1667 test instead.
(e) SAE J1667 opacity test. All diesel vehicles with a GVWR greater than 10,000 pounds and not otherwise subject to an OBD test are subject to the SAE J1667 opacity test. The Department may exempt from roadside emissions inspection such vehicles if the vehicle has been tested in another state or jurisdiction.

(f) Fuel Cap Test. All motor vehicles, except those vehicles model year 2004 and newer that receive an on-board diagnostics test, are subject to the fuel cap test.

(g) The Department may waive the requirement for any test for classes of vehicles that the Department determines are highly likely to pass such test based on statistical data from other emissions tests, including data from other states.

(h) Engine Switching. A motor vehicle with an exchanged or replaced engine is subject to the emissions inspection standards for the fuel type, model-year, and type of vehicle chassis contained on its certificate of registration.

(i) Assembled Vehicles. An assembled or reconstructed vehicle, including a vehicle with a prefabricated body, is subject to the emissions inspection applicable to the fuel type, model year, and type of vehicle chassis indicated on the vehicle’s certificate of registration.

(j) Kit Vehicles. Registrants of kit vehicles may request the Department to apply less stringent emissions standards for the transient loaded-mode test if the vehicle is operated for less than 2000 miles in the previous 12 months.

(8) Emission Test Applicability effective beginning October 1, 2008.
This subsection is effective beginning October 1, 2008.

(a) On-Board Diagnostics Test. Unless exempt pursuant to 310 CMR 60.02(3)(c), the following motor vehicles are subject to the on-board diagnostic test in accordance with Department-approved inspection procedures:
1. all light-duty nondiesel motor vehicles model year 1996 or newer;
2. all light-duty diesel motor vehicles model year 1997 or newer,
3. all medium-duty diesel motor vehicles model year 2007 or newer;
4. all medium-duty nondiesel motor vehicles model year 2008 or newer; and
5. all heavy-duty diesel and nondiesel motor vehicles equipped with OBD systems.

(b) SAE J1667 opacity test.
1. Unless exempt pursuant to 310 CMR 60.02(3)(c), diesel vehicles with a GVWR greater than 10,000 pounds and not otherwise subject to an OBD test are subject to the SAE J1667 opacity test. The Department may exempt from roadside emissions inspection such vehicles if the vehicle has been tested in another state or jurisdiction.
2. Any diesel vehicle subject to the opacity test pursuant to 310 CMR 60.02(3)(a) and (c) and 60.02(8)(b)1., shall not be subject to such test prior to April 1, 2009. After that date any such diesel vehicle shall not be subject to such opacity test if the test software or hardware has not been approved by the Department for use.

(c) Engine Switching. A motor vehicle with an exchanged or replaced engine shall be subject to the engine switching requirements in 310 CMR 60.02 (12)(d).

(d) Assembled Vehicles. An assembled or reconstructed vehicle, including a vehicle with a prefabricated body, is subject to the emissions inspection applicable to the fuel type, model year, and type of vehicle chassis indicated on the vehicle’s certificate of registration.

(e) Kit Vehicles. Kit vehicles are subject to an emissions test based on the year of the certified configuration installed in the kit vehicle:

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1 Copies of SAE J1667 may be obtained from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001.
2 Copies of SAE J1667 may be obtained from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001.
1. if the certified configuration installed in the kit vehicle is from a model year vehicle subject to an OBD test, then the kit vehicle shall be subject to the kit vehicle visual test upon initial registration and to annual OBD testing requirements for the model year of the certified configuration installed in the kit vehicle; or
2. if the certified configuration installed in the kit vehicle is from a model year vehicle not subject to an OBD test, then the kit vehicle shall be subject to the kit vehicle visual test upon initial registration and transfer of ownership.

(f) Glider Kits. Vehicles with glider kits are subject to an emissions test based on the year of the chassis on which the glider kit is installed:
1. if the chassis is subject to an OBD test, then the vehicle shall be subject to a visual inspection upon initial registration to verify that the OBD system is properly installed and to OBD testing requirements for the model year of the chassis, or
2. if the chassis is not subject to an OBD test, then the vehicle shall be subject to an opacity test if the year of the chassis and fuel type of the engine are subject to an opacity test.

(9) Advisory Scan of New Motor Vehicles effective beginning October 1, 2008. This subsection is effective beginning October 1, 2008. For any vehicle required to be equipped with an OBD system and registered first in Massachusetts after sale or lease to the ultimate purchaser, except a kit vehicle, the registrant shall obtain an advisory scan of the vehicle’s OBD system. The advisory scan is not an emissions inspection. The scan may be performed as part of the pre-delivery motor vehicle inspection performed by the seller if the seller is so authorized by the Registry. The items or characteristics to be scanned and the properties that constitute a problem shall be established by the Department. The items or characteristics to be scanned and the properties that constitute a problem shall be based on: the type of vehicle, the vehicle fuel type(s), the model year of the vehicle, vehicle certification requirements of the U.S. Environmental Protection Agency or the California Air Resources Board, and the vehicle’s OBD system design. A list of the items or characteristics to be scanned and the properties that constitute a problem shall be published by the Department on the web site for the Enhanced Emissions and Safety Test Program. Upon completion of the advisory scan of a new motor vehicle, the inspector, or a person authorized by the Registry if the seller is authorized to perform the advisory scan as part of the pre-delivery motor vehicle inspection, shall provide to the motorist a printed report of the vehicle’s advisory scan results in the format required by the Department.

(10) Inspector Procedures.

(a) The inspector shall perform emissions inspections in accordance with 310 CMR 60.02 and all Department-approved inspection procedures, including all workstation software prompts, at inspection stations licensed by the Registry.

(b) The inspector shall perform emissions inspections using Department-approved equipment and shall perform all Department-required quality control and maintenance procedures on the equipment and adhere to all safety procedures as provided in the Department-approved inspection procedures.

(c) The inspector shall record the information identified as provided in the Department’s emissions inspection procedures and the workstation software prompts.

(d) Once initiated, the inspector shall complete an emissions inspection. The inspector shall terminate the inspection if an unsafe condition or workstation error or inspector error arises during the inspection process.

(e) The inspector shall refuse to perform an emissions inspection on a motor vehicle if:
   1. the motorist fails to present the documentation specified at 310 CMR 60.02(6)(a)(1);
   2. the vehicle is carrying explosives or other materials considered to be a safety hazard by the inspector;
   3. fuel, oil, or other leaks are observed by the inspector that are considered a safety hazard by the inspector; or
   4. the inspector observes any other hazard that would compromise the safe conduct of the inspection.

(f) Upon completion of the emissions inspection, the inspector shall provide to the motorist a printed inspection report of the vehicle’s inspection results in the format required by the Department.
(g) Upon completion of the motor vehicle inspection, the inspector shall affix an inspection certificate to the windshield of the vehicle inspected indicating the proper results of the inspection.

(11) **Emissions Inspection Standards prior to October 1, 2008.** This subsection is effective prior to October 1, 2008. A motor vehicle shall fail the emissions inspection if it does not meet the applicable standards established in 310 CMR 60.02(11). The emission standards shall be applicable to cars and trucks. To determine whether a vehicle is defined as a car or truck, the Department adopts the classifications for vehicles listed in the most current release of the U.S. Environmental Protection Agency’s (EPA) I/M Look-Up Table.3

(a) **Transient Loaded-Mode Emissions Test Standards.** Vehicles subject to the transient loaded-mode test shall have emissions no higher than the cutpoints listed in Table A below as indicated for the vehicle’s class and model year. The Department may establish in the Department- approved inspection procedures alternative test cycles that have equivalent stringency to these standards. The Department may adjust the standards at its discretion to be less stringent than the cutpoints listed in Table A during the implementation phase of the emissions inspection program to address: air pollution; motorist convenience; inspection failure rates; or, motorists’ difficulty in obtaining proper repairs.

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3 The I/M Look-up Table, on the date these regulations were first published, was available through EPA’s Internet home page.
### TABLE A
**Transient Loaded – Mode Emission Test Cutpoints in Grams Per Mile**

<table>
<thead>
<tr>
<th></th>
<th>Hydrocarbons</th>
<th>Carbon Monoxide</th>
<th>Oxides of Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cars</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996 and newer</td>
<td>0.80</td>
<td>15.0</td>
<td>2.0</td>
</tr>
<tr>
<td>1991 – 1995</td>
<td>1.2</td>
<td>20.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1984 – 1990</td>
<td>2.0</td>
<td>30.0</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Trucks less than or equal to 6,000 pounds GVWR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996 and newer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3,750 LVW or less</td>
<td>0.80</td>
<td>15.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Greater than 3,750 LVW</td>
<td>1.0</td>
<td>20.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1991 – 1995</td>
<td>2.40</td>
<td>60.0</td>
<td>3.0</td>
</tr>
<tr>
<td>1988 – 1990</td>
<td>3.20</td>
<td>80.0</td>
<td>3.5</td>
</tr>
<tr>
<td>1984 – 1987</td>
<td>3.20</td>
<td>80.0</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Trucks greater than 6,000 pounds GVWR</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1996 and newer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5,750 ALVW or less</td>
<td>1.00</td>
<td>20.0</td>
<td>2.5</td>
</tr>
<tr>
<td>greater than 5,750 ALVW</td>
<td>2.40</td>
<td>60.0</td>
<td>4.0</td>
</tr>
<tr>
<td>1991 – 1995</td>
<td>2.40</td>
<td>60.0</td>
<td>4.5</td>
</tr>
<tr>
<td>1988 – 1990</td>
<td>3.20</td>
<td>80.0</td>
<td>5.0</td>
</tr>
<tr>
<td>1984 – 1987</td>
<td>3.20</td>
<td>80.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

LVW means loaded vehicle weight.
ALVW means adjusted loaded vehicle weight.

(b) **Two-Speed Idle Test Standards.** Vehicles subject to the two-speed idle test shall have emissions no higher than the cutpoints indicated for the vehicle’s model year in Table B. The following emissions control devices or equipment also shall be present and functional as indicated by procedures specified by the Department: catalytic converter, air pump, exhaust gas recirculation valve, and positive crankcase ventilation valve.

### TABLE B
**Two-Speed Idle Emission Test Cutpoints**

<table>
<thead>
<tr>
<th>Model Years</th>
<th>Hydrocarbons (parts per million)</th>
<th>Carbon Monoxide (percent per standard volume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Vehicle Classes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1987 and newer</td>
<td>100</td>
<td>0.60</td>
</tr>
<tr>
<td>1984 – 1986</td>
<td>220</td>
<td>0.80</td>
</tr>
</tbody>
</table>

(c) **Opacity Standards for Diesel Vehicles.** Vehicles subject to an opacity test shall have emissions opacity no greater than the cutpoints in Table C as indicated for the vehicles class and model year.

### TABLE C
**Opacity Test Cutpoints**

<table>
<thead>
<tr>
<th>Diesel cars and trucks less than 8,500 pounds GVWR</th>
<th>Percent Opacity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
</tr>
</tbody>
</table>
Diesel trucks 8,500 to 10,000 pounds GVWR  40%

Diesel trucks greater than 10,000 pounds GVWR
   1984 – 1990 model years  55%
   1991 and newer  40%

Diesel buses greater than 10,000 pounds GVWR
   1984 – 1993 model years  40%
   1994 and newer  30%

(d) **Fuel Cap (Pressure Decay) Test.** Using a Department approved method, the fuel cap shall fail the pressure test if it loses more than six inches of water column (WC) pressure over a period of ten seconds from a starting pressure of 28 +/- 1 inch of water.

(e) **On-Board Diagnostics Test.** A vehicle shall fail the on-board diagnostics test if:
   1. the data link connector is missing, has been tampered with, or malfunctions, or the OBD system has been altered in such a way as to make OBD system testing impossible;
   2. the malfunction indicator light is commanded by the OBD system to be illuminated; or,
   3. the vehicle’s OBD system reveals insufficient readiness codes are set for the components of the OBD system except as provided for reinspections at 310 CMR 60.02(12)(c).

(12) **Emissions Inspection Standards effective beginning October 1, 2008.** This subsection is effective beginning October 1, 2008. A motor vehicle shall fail the emissions inspection if it does not meet the applicable standards established in 310 CMR 60.02(12).

(a) **Opacity Standards for Diesel Vehicles.** Any vehicle subject to an opacity test shall have emissions opacity no greater than the cutpoints in Table D as indicated for that vehicle’s class and model year.

### TABLE D
**Opacity Test Cutpoints**  
**Effective Beginning October 1, 2008**

<table>
<thead>
<tr>
<th>Class</th>
<th>Percent Opacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel trucks greater than 10,000 pounds GVWR</td>
<td></td>
</tr>
<tr>
<td>1984 – 1990 model years</td>
<td>40%</td>
</tr>
<tr>
<td>1991 – 1996 model years</td>
<td>30%</td>
</tr>
<tr>
<td>1997 and newer model years</td>
<td>20%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Percent Opacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel buses greater than 10,000 pounds GVWR</td>
<td></td>
</tr>
<tr>
<td>1984 – 1987 model years</td>
<td>40%</td>
</tr>
<tr>
<td>1988 – 1993 model years</td>
<td>30%</td>
</tr>
<tr>
<td>1994 and newer model years</td>
<td>20%</td>
</tr>
</tbody>
</table>

(b) **On-Board Diagnostics Test.** A vehicle shall fail the on-board diagnostics test if:
   1. the data link connector is missing, has been tampered with, or malfunctions, or the OBD system has been altered in such a way as to make OBD system testing impossible;
   2. the malfunction indicator light is commanded by the OBD system to be illuminated;
   3. the malfunction indicator light does not illuminate properly when commanded on by the OBD system;
4. the vehicle’s OBD system reveals insufficient readiness codes, for light-duty nondiesel vehicles as prescribed in 40 CFR 85.2222 or as otherwise determined by the Department in consultation with the U.S. Environmental Protection Agency, and as determined by the Department for all other vehicles, are set for the components of the OBD system except as provided for reinspections at 310 CMR 60.02(14)(b); or

5. the vehicle’s OBD system reveals other OBD system malfunctions or conditions as identified by the Department.

(c) Kit Vehicle Visual Test. A kit vehicle shall be subject to a visual test to verify compliance with the following emissions requirements; and kit vehicle registrants shall supply any documentation required by the inspector, the Department, or the registry:

1. The components of the drivetrain (e.g., engine, transmission, and differential) shall be exclusively or substantially used or rebuilt. Regardless of the combination of new and used components, the engine shall be used, or used and rebuilt. The engine block and cylinder head(s) shall be used; other components of the engine may be new. For purposes of this subsection, “used” means the component has been in a vehicle that has been titled to an ultimate purchaser. For purposes of this subsection, a “rebuilt component” is defined as a used component which has been refurbished with new or other used parts;

2. Kit vehicles shall have the same transmission configuration (i.e., manual, automatic, semi-automatic, and number of forward gears) as the originally certified configuration, and have an N/V ratio (speed of vehicle in miles per hour/speed of engine in revolutions per minute) which matches the N/V ratio of the originally certified configuration within three percent in every gear;

3. All emissions-related components and settings shall conform in all material respects to those of one previously certified configuration (all emissions-related components shall match or be traceable to one previously certified configuration);

4. All catalytic converters, oxygen sensors, and charcoal canisters shall be new, original equipment parts, or replacement parts equivalent to the original equipment parts;

5. If the originally certified configuration required unleaded fuel, then the vehicles shall have fuel filler neck restrictors and unleaded fuel labels which meet the requirements of 40 CFR 80.24;

6. The vehicle weight of the kit configuration can be no more than 500 pounds greater than the weight of the originally certified configuration;

7. Each vehicle and its accompanying documentation shall be clearly labeled as to the make, model year, chassis year, engine year, engine family, subfamily, and tune-up specifications represented by the originally certified vehicle.

(d) Engine Switching Requirements. A motor vehicle with an exchanged or replaced engine shall be subject to the following requirements:

1. the vehicle configuration following the engine switch shall be a certified configuration;

2. the certified configuration shall be of the same emissions certification category, as established by the U.S. Environmental Protection Agency or the California Air Resources Board;

3. engine switching between vehicle California-certified and federally-certified vehicles is prohibited;

4. engine switching between vehicle classes is prohibited; and

5. for heavy-duty vehicles, the engine switched into a heavy duty truck shall be of a certified configuration of the same model year or newer as the year of the engine originally installed in the vehicle.

(13) Reinspections prior to October 1, 2008.

This subsection is effective prior to October 1, 2008.

(a) The inspector shall inspect every vehicle presented for reinspection in accordance with the emissions inspection requirements of 310 CMR 60.02 and Department-approved inspection procedures.

(b) The inspector shall perform the reinspection in accordance with the same requirements as an initial emissions inspection for the failed portion of the inspection. Thus, if a vehicle obtained a transient loaded
mode test, a two speed idle test, an opacity test, an OBD test or a visual inspection of the malfunction indicator light for the initial inspection pursuant to 310 CMR 60.02(7), the vehicle shall receive the same test(s) on reinspection.

(c) Notwithstanding 310 CMR 60.02(13)(b), if a vehicle failed the on-board diagnostics test during the most recent initial inspection and insufficient readiness codes are set at the reinspection, the inspection shall abort and the inspector shall turn the vehicle away.

(d) If a vehicle returns for a safety reinspection 60 days or more after failing an initial safety inspection that did not include an emissions test, the vehicle shall be subject to an emissions and safety inspection at that time. Such inspection shall be considered the vehicle’s initial emissions inspection.

(e) If the vehicle passes reinspection, the vehicle shall receive an emissions inspection certificate indicating compliance with emissions inspection requirements.

(f) Unless a vehicle that has failed an emissions inspection passes a reinspection within 60 days or obtains a waiver, the vehicle shall not be operated on a public road and the registration of any such Massachusetts-registered motor vehicle shall be suspended in accordance with 540 CMR 4.00.

(14) Reinspections effective beginning October 1, 2008.
This subsection is effective beginning October 1, 2008.

(a) The inspector shall inspect every vehicle presented for reinspection in accordance with the emissions inspection requirements of 310 CMR 60.02, Department-approved inspection procedures, and workstation software prompts.

(b) If a vehicle failed the on-board diagnostics test during the most recent initial inspection and does not meet readiness criteria as prescribed by 310 CMR 60.02(12)(4) at the reinspection, the vehicle shall be turned away consistent with Department-approved inspection procedures. A vehicle not meeting readiness criteria as prescribed by 310 CMR 60.02(12)(4) upon reinspection is not considered to have received an emissions reinspection.

(c) If the vehicle passes reinspection, the vehicle shall receive an emissions inspection certificate indicating compliance with emissions inspection requirements.

(d) Unless a vehicle that has failed an emissions inspection passes a reinspection within 60 days, obtains a waiver, or obtains an economic hardship failure repair extension, the vehicle shall not be operated on a public road and the registration of any such Massachusetts-registered motor vehicle shall be suspended in accordance with 540 CMR 4.00.

(15) Challenge Inspections.

(a) A motorist may challenge the results of an emissions inspection or reinspection. To challenge the results of an emissions inspection or reinspection, a motorist shall notify the Registry, in a form and manner as specified by the Registry, within two days (excluding Sundays, Commonwealth and federal holidays) of the inspection being challenged, and shall submit his or her vehicle for another emissions inspection at an inspection station or other facility as designated by the Registry or the Department.

(b) If the vehicle fails a challenge inspection or reinspection, the motorist shall pay the inspection station or other facility for the cost of the inspection. If the vehicle passes the challenge inspection, the inspector shall issue the appropriate inspection certificate and report but shall not charge any inspection fee to the motorist.

(16) Waivers prior to October 1, 2008.
This subsection is effective prior to October 1, 2008.

(a) A motorist may apply for a waiver of emission inspection standards if the following conditions are met:
1. the vehicle failed a reinspection; and
2. emissions-related repairs were performed on the vehicle by a registered repair technician.
(b) The motorist shall present the vehicle to a location designated by the Registry or the Department along with the following documentation when applying for a waiver:
1. the vehicle’s most recent reinspection report;
2. a repair form completed and signed by a registered repair technician, if the registered repair technician did not previously supply the information in a manner specified by the Department;
3. receipts for all emissions-related repairs completed by a registered repair technician since the vehicle’s most recent initial inspection; and
4. any other documents required by the Department.

(c) An emissions waiver certificate shall be granted if all of the following requirements are met:
1. the emission control system is present and there is no evidence of tampering;
2. for transient loaded mode and two speed idle emissions tests, emissions levels are less than three times the standard for each pollutant tested;
3. for transient loaded mode and two speed idle emissions tests, the vehicle’s emissions continue to meet standards for pollutants that met the standards at the most recent initial inspection;
4. the malfunction indicator light is not commanded on by the OBD system for any diagnostic trouble code(s) for misfire or catalytic converter efficiency;
5. repairs were performed that were appropriate for the type of emissions inspection failure(s) that occurred and resulted in improvements in emissions levels for transient loaded mode and two speed idle emissions tests, or were appropriate for the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system;
6. the motorist has used all relevant manufacturer warranty coverage including recalls to repair the vehicle;
7. repair expenditures exceed the following limits:
   (a) $400 for vehicles up to but not exceeding five model years old;
   (b) $300 for vehicles over five but not exceeding 10 model years old; and
   (c) $200 for vehicles over 10 model years old; and
8. all safety requirements are met.

(d) Costs associated with the following repairs are not eligible for consideration toward the waiver cost limit:
1. tampering-related repairs to the emissions control system except where it can be verified that the part in question or one similar to it is no longer available for sale;
2. repairs to an emissions control system which has been dismantled or rendered inoperable except where it can be verified that the part in question or one similar to it is no longer available for sale;
3. repairs to an OBD system that will not communicate with emission inspection equipment;
4. repairs to an OBD system to meet minimum test criteria for readiness;
5. repairs under any warranty;
6. repairs that are subject to a manufacturer’s recall;
7. repairs unrelated to emissions performance or inappropriate for the type of emission inspection failure that occurred for transient loaded mode and two speed idle emissions tests, or unrelated to the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system;
8. repairs performed prior to the most recent initial inspection failure; and
9. repairs not performed by a registered repair technician.

(e) An emissions waiver certificate is valid until the vehicle’s next emissions inspection.

(f) An emissions waiver certificate is not transferable upon the sale of the vehicle or transfer of the vehicle’s registration.

(g) Diesel vehicles with a GVWR greater than 10,000 pounds are not eligible for a waiver from opacity standards.
(17) **Waivers effective beginning October 1, 2008.**

This subsection is effective beginning October 1, 2008.

(a) A motorist may apply for a waiver of emission inspection standards if the following conditions are met:
   1. the vehicle failed a reinspection; and
   2. emissions-related repairs appropriate for the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system were performed on the vehicle by a registered repair technician.

(b) The motorist shall present the vehicle to a location designated by the Registry or the Department along with the following documentation when applying for a waiver:
   1. receipts for all emissions-related repairs completed by a registered repair technician since the vehicle’s most recent initial inspection indicating the problem(s) diagnosed and the problem(s) to which the repairs are applicable; and
   2. any other documents required by the Department.

(c) An emissions waiver certificate shall be granted if all of the following requirements are met:
   1. all safety inspection requirements are met;
   2. the vehicle is registered with the Registry as a private passenger motor vehicle or auto home pursuant to 510 CMR 2.05;
   3. the emission control system is present and there is no evidence of tampering;
   4. the malfunction indicator light is not commanded on by the OBD system for any diagnostic trouble code(s) for misfire, catalytic converter efficiency, particulate filter efficiency, or for equipment related to energy storage in a hybrid vehicle;
   5. the malfunction indicator light is functioning properly;
   6. repairs were performed that were appropriate for the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system;
   7. the motorist has used all relevant manufacturer warranty coverage including recalls to repair the vehicle;
   8. repair expenditures exceed the following limits:

<table>
<thead>
<tr>
<th></th>
<th>Limit</th>
<th>Description</th>
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<tbody>
<tr>
<td>(a)</td>
<td>$750</td>
<td>for vehicles five model years old or newer;</td>
</tr>
<tr>
<td>(b)</td>
<td>$650</td>
<td>for vehicles over five but not exceeding 10 model years old; and</td>
</tr>
<tr>
<td>(c)</td>
<td>$550</td>
<td>for vehicles over 10 model years old.</td>
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Beginning January 1, 2010, the expenditure limits in this subsection shall be subject to automatic annual adjustment. On January 1, 2010, the expenditure limit in 310 CMR 60.02 (17)(c)(8)(a) shall be adjusted by the percentage, if any, by which the Consumer Price Index (“CPI”) for the preceding calendar year differs from the CPI of 1989 and the adjusted expenditure limit shall be rounded to the nearest five dollars ($5). The expenditure limit in 310 CMR 60.02(17)(c)(8)(b) shall then be adjusted by subtracting one hundred dollars ($100) from the adjusted expenditure limit in 310 CMR 60.02(17)(c)(8)(a). The expenditure limit in 310 CMR 60.02(17)(c)(8)(c) shall then be adjusted by subtracting two hundred dollars ($200) from the adjusted expenditure limit in 310 CMR 60.02(17)(c)(8)(a). The Department will publish these adjusted expenditure limits on the web site for the Enhanced Emissions and Safety Test Program.

(d) Costs associated with the following repairs are not eligible for consideration toward the waiver cost limit:
   1. tampering-related repairs to the emissions control system except where it can be verified that the part in question or one similar to it is no longer available for sale;

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4 The CPI for any calendar year is the average of the CPI for all-urban consumers published by the Department of Labor, as of the close of the twelve (12) month period ending August 31 of each calendar year, as prescribed by 40 C.F.R. § 51.360(a)(7)(i). The revision of the CPI that is most consistent with the CPI for calendar year 1989 shall be used, as prescribed by 40 C.F.R. § 51.360(a)(7)(ii).
2. repairs to an emissions control system which has been dismantled or rendered inoperable, except where it can be verified that the part in question or one similar to it is no longer available for sale;
3. repairs to a vehicle to correct an engine switch that does not meet the requirements of 310 CMR 60.02(13)(d);
4. repairs to an OBD system to correct its failure to communicate with emission inspection equipment;
5. repairs to an OBD system to return the malfunction indicator light to proper operation;
6. repairs to an OBD system to meet minimum test criteria for readiness, except that if it was necessary to replace the vehicle’s powertrain control module to meet minimum test criteria for readiness and the vehicle failed upon reinspection because the malfunction indicator light was commanded by the OBD system to be illuminated, then one-half of the cost for such replacement may be combined with the repairs appropriate for the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system to meet the applicable waiver cost limit;
7. repairs under any warranty;
8. repairs that are subject to a manufacturer’s recall;
9. repairs unrelated to emissions performance or inappropriate for the diagnostic trouble code(s) that caused the malfunction indicator light to be commanded on by the OBD system;
10. repairs performed prior to the most recent initial inspection failure; and
11. repairs not performed by a registered repair technician, except where the Department has determined that specialty repairs not typically performed by a registered repair technician are necessary.

(e) An emissions waiver certificate is valid until the vehicle’s next emissions inspection.

(f) An emissions waiver certificate is not transferable upon the sale of the vehicle or transfer of the vehicle’s registration.

(g) Diesel vehicles with a GVWR greater than 10,000 pounds are not eligible for a waiver from opacity standards.

(18) Diagnostic Waivers prior to October 1, 2008.
This subsection is effective prior to October 1, 2008.

(a) A motorist may apply for a waiver of emissions standards for transient loaded mode and two speed idle emissions tests based on the non-repairability of a vehicle if the following conditions are met:
1. the vehicle failed a reinspection; and
2. a registered repair technician performed all emission-related repairs possible.

(b) The Registry or its designee shall:
1. examine the vehicle to verify that the emissions-related repairs performed were appropriate for the particular emissions failure(s) that occurred;
2. ensure that the emission control system is present and there is no evidence of tampering;
3. ensure that sufficient emissions-related repairs were performed on the vehicle by a registered repair technician;
4. ensure that a repair form was completed and signed by a registered repair technician;
5. ensure that the vehicle passes all physical and functional checks of its emissions control systems;
6. determine that no additional repairs can be made that will reduce emission levels;
7. ensure that repairs performed since the most recent initial inspection did not cause an overall increase in the vehicle’s emissions; and
8. ensure that all safety requirements are met.

(c) If the conditions of 310 CMR 60.02(18)(a) and (b) are met, a diagnostic waiver certificate shall be issued to the vehicle exempting it from compliance with the emissions test standards that the vehicle failed to meet.

(d) A diagnostic waiver is valid until the vehicle’s next emissions inspection.

(e) A diagnostic waiver is not transferable upon the sale of the vehicle or transfer of the vehicle’s registration.
This subsection is effective beginning October 1, 2008.

(a) A motorist may apply for an economic hardship failure repair extension if the following conditions are met:
   1. the vehicle failed its most recent reinspection;
   2. the vehicle does not qualify for a waiver pursuant to 310 CMR 60.02(17);
   3. the economic hardship failure repair extension is not for any emissions inspection or reinspection required by 310 CMR 60.02(5)(c) associated with initial registration in Massachusetts or by 310 CMR 60.02(5)(d) associated with a transfer of ownership;
   4. documentation of the malfunction(s) causing the economic hardship failure(s) and an estimate of related repairs is provided by a registered repair technician;
   5. each diagnostic trouble code recorded during the most recent reinspection qualifies as an economic hardship failure.
   6. the motorist has used all relevant warranty coverage including recalls to repair the vehicle.

(b) The motorist shall present the vehicle to a location designated by the Registry or the Department along with the following documentation when applying for an economic hardship repair extension:
   1. an estimate provided by a registered repair technician of the cost of repairs related to the emissions failure;
   2. the vehicle’s current registration; and
   3. any other documents required by the Registry or the Department.

(c) An economic hardship failure repair extension shall be granted after an OBD emissions inspection failure if all of the following requirements are met:
   1. the cost of a single component repair or replacement to correct a diagnostic trouble code for the component is more than 1.5 times the repair expenditure limit applicable for the model year of the vehicle specified in 310 CMR 60.02(17)(c)8.(a), (b), or (c), including any adjustment for CPI;
   2. the vehicle does not qualify for a waiver pursuant to 310 CMR 60.02(17);
   3. the economic hardship failure repair extension is not for any emissions inspection or reinspection required by 310 CMR 60.02(5)(c) associated with initial registration in Massachusetts or by 310 CMR 60.02(5)(d) associated with a transfer of ownership;
   4. the Department or its designee agrees with the findings of the registered repair technician regarding the cause of the economic hardship failure, that the repair estimate is related to repairs appropriate for the economic hardship failure, and that the repair estimate provided by the registered repair technician is reasonable;
   5. each diagnostic trouble code recorded during the most recent reinspection qualifies as an economic hardship failure;
   6. the motorist has used all relevant warranty coverage including recalls to repair the vehicle.
   7. all safety inspection requirements are met;
   8. the vehicle is registered with the Registry as a private passenger motor vehicle or auto home pursuant to 510 CMR 2.05;
   9. the emission control system is present and there is no evidence of tampering; and
   10. the repair estimate is related to repairs appropriate for the economic hardship failure.

(d) An economic hardship repair extension is valid until the vehicle’s next emissions inspection.

(e) A vehicle granted an economic hardship failure repair extension may not be issued a waiver or an economic hardship failure repair extension in lieu of passing its next emissions inspection or reinspection.
(20) **Inspector Training and Certification.**

(a) No person shall perform an emissions inspection unless such person is certified by the Department or its designee and licensed by the Registry.

(b) To become an inspector a person shall receive Department-approved training, be certified by the Department, and licensed by the Registry to perform inspections.

(c) To meet the certification requirement, a person shall:
   1. pass the Department-approved exam;
   2. demonstrate to the satisfaction of the Department or its designee, the ability to conduct a proper inspection and perform proper quality control and workstation maintenance procedures; and
   3. not have a pattern of noncompliance with respect to performing motor vehicle inspections.

(d) **Certification.** The Department shall certify a person who meets the requirements at 310 CMR 60.02(20)(c).

(e) The Department may require inspectors to obtain additional training and pass additional exams prior to renewing their certifications if the Department determines that such training and examinations are appropriate to accommodate changes in the test equipment, changes in test procedures, or other changes in the motor vehicle inspection and maintenance program. The Department shall make any such determination in writing. An emissions inspector certificate shall renew automatically upon renewal of the emissions inspector license unless the Department makes such determination prior to the inspector’s license renewal.

(21) **Repair Technician Registration prior to October 1, 2008.**

This subsection is effective prior to October 1, 2008.

(a) To become a registered repair technician an applicant shall complete the Department-approved repair technician training module and meet at least one of the following requirements:
   1. be ASE L-1 certified; or
   2. have passed the Department-approved assessment test demonstrating that his or her abilities are equivalent to, or better than, ASE L-1 certification and obtain ASE L-1 certification within 18 months of passing the assessment test; or
   3. have successfully completed the Department-approved repair technician training course and obtain ASE L-1 certification within 18 months of passing the last module in the training course.

(b) To become a registered repair technician, specializing in the repair of diesel vehicles, an applicant shall complete the Department-approved repair technician training module and meet at least one of the following requirements:
   1. be ASE L-2 certified or have equivalent certification from an engine manufacturer; or
   2. have passed the Department-approved assessment test demonstrating that his or her abilities are equivalent to, or better than ASE L-2 certification and obtain ASE L-2 certification within 36 months of passing the assessment test; or
   3. obtain ASE L-2 certification within 36 months of passing the training course.

(22) **Repair Technician Registration effective beginning October 1, 2008.**

This subsection is effective beginning October 1, 2008.

(a) To become a registered repair technician, an applicant shall complete any Department-required repair technician training, and meet at least one of the following requirements:
   1. be ASE L-1 certified;
   2. have equivalent certification from a motor vehicle or engine manufacturer, as determined by the Department or its designee (registered repair technicians qualifying under this provision would be registered repair technicians only for the motor vehicle or engine manufacturer’s vehicles to which the equivalent certification applies), and be employed by a dealership for that manufacturer or by a repair facility recognized or authorized by the engine manufacturer; or
3. have equivalent certification from another certification organization, as determined by the Department or its designee.

(b) To become a registered repair technician, specializing in the repair of diesel vehicles, an applicant shall complete the Department-approved repair technician training module and meet at least one of the following requirements:
   1. be ASE L-2 certified; or
   2. have equivalent certification from a motor vehicle or engine manufacturer, as determined by the Department or its designee (registered repair technicians qualifying under this provision would be registered repair technicians only for the motor vehicle or engine manufacturer’s vehicles to which the equivalent certification applies), and be employed by a dealership for that manufacturer or by a repair facility recognized or authorized by the engine manufacturer; or
   3. have equivalent certification from another certification organization, as determined by the Department or its designee.

(c) The Department may remove a registered repair technician’s registration if:
   1. any requirement for qualification as a registered repairer is not met or maintained;
   2. the registered repair technician provides false documentation to the Department or its designee, the Registry, or a motorist, of repairs performed on a vehicle;
   3. the registered repair technician provides false documentation to the Department or its designee, the Registry, or the motorist, of the cost of repairs performed on a vehicle; or
   4. the Department, the Registry, or any state or federal agency or court of competent jurisdiction determines that the registered repairer has performed or been a party to fraudulent or deceptive business practices, including, but not limited to: charging motorists for repairs not performed; or, recommending or performing repairs unrelated to the cause of an emissions inspection failure and representing those repairs as related to the cause of an emissions inspection failure, or has violated any laws, rules, regulations, or other requirements or orders related to the protection of the environment.

(d) Any automotive repair facility listed by the Department as employing a registered repair technician may be removed from the Department’s list of such automotive repair facilities if:
   1. the listed automotive repair facility no longer employs a registered repair technician.
   2. the listed automotive repair facility provides false documentation to the Department or its designee, the Registry, or a motorist of repairs performed on a vehicle;
   3. the listed automotive repair facility provides false documentation to the Department or its designee, the Registry, or the motorist of the cost of repairs performed on a vehicle; or
   4. the Department, the Registry, or any state or federal agency or court of competent jurisdiction determines that any owner, operator, or employee of the listed automotive repair facility, while in the exercise of his or her responsibilities or duties related to the automotive repair facility, has performed or been a party to fraudulent or deceptive business practices, including, but not limited to, charging motorists for repairs not performed, recommending or performing repairs unrelated to the cause of an emissions inspection failure and representing those repairs as related to the cause of an emissions inspection failure, or has violated any laws, rules, regulations, or other requirements or orders related to the protection of the environment.

(23) Prohibition against tampering

All persons are prohibited from tampering with any vehicle emissions control device or system. No person or entity shall take any action or fail to take any action that causes a motor vehicle to no longer comply with federal or state law, with standards for the motor vehicle emissions inspection, or with requirements for motor vehicle registration. This provision shall not be construed as preventing the temporary alteration of equipment for the purpose of motor vehicle repair or quality assurance by the Department, Registry, or their designees.
(24) **Enforcement.**

(a) No motorist may operate any vehicle without a valid inspection certificate.

(b) No motorist may operate any motor vehicle in violation of 310 CMR 60.02.

(c) **Registration Suspension.** A motor vehicle which does not comply with the applicable emissions inspection requirements shall be subject to registration suspension pursuant to 540 CMR 4.00 until the vehicle passes the applicable emissions inspection or obtains a waiver.

(d) No person shall give false information to an inspection station, an inspector, the Registry, or the Department or its designee concerning any repairs or associated expenditures to be considered for determining eligibility for a waiver or economic hardship repair extension waiver.

(e) **Inspection Certificates.**
   1. No person shall issue an inspection certificate indicating compliance with 310 CMR 60.02 for a motor vehicle that has not been inspected or reinspected in accordance with, or is not in compliance with, the standards for the applicable motor vehicle emissions inspection pursuant to 310 CMR 60.02.
   2. An inspector shall issue an inspection certificate indicating compliance only for a motor vehicle that he or she has inspected and determined to comply with the applicable standards for motor vehicle emissions inspections pursuant to 310 CMR 60.02.
   3. An inspector shall issue a certificate indicating failure of the emissions inspection to any motor vehicle that he or she has inspected and determined does not comply with the applicable standards for motor vehicle emissions inspection pursuant to 310 CMR 60.02.
   4. No person or entity may alter, falsify, or counterfeit an inspection certificate, waiver certificate, or diagnostic waiver certificate.
   5. No person shall affix an inspection certificate, waiver certificate, or diagnostic waiver certificate to a motor vehicle other than the motor vehicle for which the certificate was issued.

(f) **Penalty Provisions.**
   1. The Department may impose a penalty against an inspection station for any violation of 310 CMR 60.02 at that inspection station. The Department may impose a penalty against any person for any violation of 310 CMR 60.02.
   2. Any person who violates any provision of G.L. c.111, §142M or 310 CMR 60.02 shall be subject to a civil or administrative penalty or fine or imprisonment pursuant to G.L. c.111, §142M and c.21A, §16.
   3. Each day or portion thereof on which a violation occurs or continues shall be deemed a separate violation.
   4. Whenever the Department seeks to assess a civil administrative penalty pursuant to G.L. c.21A, §16, G.L. c.111, §142M and 310 CMR 60.02, the person who would be assessed the penalty shall have the right to an adjudicatory hearing. Any request for an adjudicatory hearing thereon shall be made in accordance with G.L. c.21A, §16, and 310 CMR 5.00.
Appendix D

Massachusetts Vehicle Check

Terms and Acronyms

Massachusetts Vehicle Check
Terms and Acronyms

**7D Vehicle** means a vehicle registered with the Registry as a school pupil transport vehicle pursuant to M.G.L. Chapter 90 Section 7D. These are usually passenger-type light duty vehicles used to transport school pupils.

**7D Inspection** means a separate, distinct safety inspection for 7D vehicles as described under CMR 21.00

**7D Endorsement** means an endorsement to a class A, B or D license which permits the Licensee to inspect 7D (pupil transport) vehicles in accordance with M.G.L. chapter 90, section 7D, 540 CMR 21.00 and policies and procedures promulgated be the Registrar.

**ALARS** means the Massachusetts Registry of Motor Vehicles’ Automated Licensing and Registration System.

**ASE** means the National Institute for Automotive Service Excellence.

**Assembled Vehicle** means a unique vehicle constructed from parts of other motor vehicles.

**Bar Code** means a series of specially coded bars from which vehicle or inspection identification information can be read electronically.

**Certificate of Inspection** means a serially numbered, adhesive sticker, device, or symbol, as may be prescribed by the Registrar, indication a motor vehicle has met the inspection requirements established by the Registrar. The Registrar may prescribe the use of one or more categories of said Certificates.

**Certificate of Rejection** means a serially numbered, adhesive sticker, document, device or symbol, as may be prescribed by policies and procedures of the Registrar, indicating a motor vehicle or motorcycle has failed to meet the Safety and Combined Safety and Emission Inspection requirements.
Certificate of Waiver means a serially numbered device or symbol, as may be prescribed by the Registrar, indicating that the requirements of passing the Emissions portion of the Combined Safety and Emission Inspection has been waived for a vehicle pursuant to 540 CMR 4.00

Challenge Inspection means a process available to motorists to challenge the validity of the results of their vehicle’s inspection.

Commercial Motor Vehicle Inspection means an inspection of a commercial motor vehicle as defined in 540CMR 4.00, et seq.

Commissioner means the Commissioner of the Department of the Department of Environmental Protection for the Commonwealth

Covert Vehicle Audit means a performance audit of a Station or inspector performed by submitting for inspection a vehicle set to fail the emissions test.

Cutpoint means the maximum allowable opacity level for a diesel vehicle’s exhaust that passes the emissions inspection. Levels above the cutpoint constitute failure of the emissions inspection, and levels at or below the cutpoint mean the vehicle passes the emissions inspection.

DLC means the Data Link Connector which is the standardized electrical connector required for OBD equipped vehicles to provide access to the vehicle’s OBD system.

DTC means Diagnostic Trouble Code which is a confirmed fault code stored in the OBD system when it has confirmed that a malfunction exists. The DLC is a five character alpha-numeric string and indicates the system or component that was identified by the vehicle’s OBD system as not operating within allowable limits.

Diesel Engine means an engine using a compression ignition thermodynamic cycle.

Emission Control System means any device or combination of parts designed by the manufacturer to control the emission of a motor vehicle.

Emissions Test means all of the procedures required to determine whether a vehicle’s emission control system is operating within acceptable limits, including any visual or functional checks.

Emissions Repair means a repair performed on a subject motor vehicle that has failed an emissions test for the purpose of allowing such vehicle to pass a reinspection.

Emissions Waiver means a waiver of emission inspection standards pursuant to 310 CMR 60.02
EPA means the United States Environmental Protection Agency.

EVAP means Evaporative Control System

Failed Vehicle means a subject vehicle that has had an inspection and which failed the emissions test, the safety test, or both.

GCWR means Gross Combined Weight Rating: the value specified by the manufacturer as the maximum design loaded weight of a vehicle and an attached trailer.

GVWR means Gross Vehicle Weight Rating: the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.

Heavy Duty Diesel Vehicle means a motor vehicle with a GVWR greater than 14,000 pounds, equipped with a diesel engine, and operating on any fuel or combination of fuels.

Heavy Duty Non-Diesel Vehicle means a motor vehicle with a GVWR greater than 14,000 pounds, not equipped with a diesel engine, and operating on any fuel, or combination of fuels.

Initial Inspection means either 1) the first inspection of a vehicle under the Program, or 2) any subsequent inspection where the previous inspection was either passed or the vehicle received an emissions waiver.

Inspection Station means a business that has received a motor vehicle inspection station license from RMV and that has executed a standard agreement with the Contractor to conduct motor vehicle inspections.

Inspection Station Network means the complete system of Inspection Stations and Motorist Assistance Centers.

Inspector means a person authorized by RMV to perform inspections.

Kit Vehicle means a unique vehicle or replica of any vehicle, the production volume of which is less than 500 vehicles per year.

L-1 means the Advanced Engine Repair Specialist Certification issued by the ASE

L-2 means the Electronic Diesel Engine Diagnosis Specialist Certification issued by the ASE.

Light Duty Diesel Vehicle means a passenger car or a truck with a GVWR of 8,500 pounds or less, equipped with a diesel engine, and operating on any fuel or combination of fuels.
**Light Duty Non-Diesel Vehicle** means a passenger car or truck with a GVWR of 8,500 pounds or less, not equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Lockout** means any automated action programmed into Workstation software that prevents inspections from being performed on that Workstation under any circumstances. Lockout may occur, for example, if the workstation does not meet quality control standards, if network participation fees have not been paid, or if the Workstation cannot communicate with the Database.

**M.A.C.** means Motorist Assistance Center.

**Mass DEP** means the Massachusetts Department of Environmental Protection.

**Medium Duty Diesel Vehicle** means a motor vehicle with a GVWR greater than 8,500 and less than or equal to 14,000 pounds, equipped with a diesel engine, and operating on any fuel or combination of fuels.

**Medium Duty Non-Diesel Vehicle** means a motor vehicle with a GVWR greater than 8,500 and less than or equal to 14,000 pounds, not equipped with a diesel engine, and operating on any fuel or combination of fuels.

**MIL** means Malfunction Indicator Lamp which is an amber-colored warning light located on the dashboard of vehicles equipped with OBD systems, indicating to the vehicle operator that the OBD system has identified a problem with an emission control component or system, or with the OBD system.

**Model Year** means the vehicle manufacturer’s annual production period for each engine family which includes January one of a calendar year or, if the manufacturer has no annual production period for the engine family, the year in which the vehicle was manufactured. If a motor vehicle is manufactured in two or more states, the model year shall be determined by the date on which the chassis is completed.

**Motor Vehicle** means all vehicles as defined in M.G.L. chapter 90, section 1 that are propelled primarily on land by power other than by muscular power including passenger vehicles and trucks operating on any fuel type. “Motor Vehicle” does not mean railroad and railway engines or cars, vehicles operated by the system known as trolley motor or trackless trolley, vehicles designed for off-highway use, or vehicles incapable of a speed greater than twenty-five miles per hour on a level surface.

**Network Control File** means a file that resides on the Database and Workstation that is used to set values for variable parameters that control the inspection.
**OBD** means On-board Diagnostics which is the electronic system that monitors, detects, stores, and reports information on the operating conditions of a vehicle’s emission control system as required by 40 CFR Part 86 or 310 CMR 7.40.

**OEM** means Original Equipment Manufacturer

**ORC** means Oxidation-Reduction Catalyst

**Opacity Test** means a measurement of how much light is blocked by the exhaust of a diesel vehicle.

**Oxides of Nitrogen** (NOx) means. Different combinations of oxygen and nitrogen resulting from high temperatures

**Quality Assurance** means an on-going program designed to discover, correct and prevent fraud, waste, and abuse and to determine whether inspection procedures are followed adequately.

**Quality Control** means an ongoing program to ensure that safety inspection and emissions inspection equipment is maintained properly and that accuracy is maintained.

**PCM** means Powertrain Control Module which is the electronic control unit on OBD equipped vehicles that controls and monitors performance of powertrain components required to be monitored by the OBD system.

**Readiness Codes** means the codes stored by a vehicle’s OBD system that indicates whether a vehicle’s OBD system has been able to complete its checks for proper functioning of the vehicle’s emission-related components and system.

**Readiness Monitor** means the feature of the OBD system that indicates whether the OBD system has completed a diagnostic routine associated with a monitored component or System, to determine whether the MIL should be illuminated. The Readiness Monitor is set to Not Ready before the diagnostic routine has been completed, and is set to Ready when the diagnostic routine has been completed. If a component or system required to be monitored by the OBD is not installed on the vehicle, then the Monitor is Unsupported.

**RMV** means the Massachusetts Registry of Motor Vehicles.

**Referee Station** means a location which may be designated by the registrar to verify the accuracy of inspections performed by Licensed Inspection stations and to grant certificates of waiver.

**Reinspection** means an inspection performed on a vehicle or nonmotorized equipment which failed its initial inspection.
**Remote OBD** means technology such as transponders, in-vehicle data collection devices, self-serve kiosks, or similar methods used to collect and transmit a vehicle’s OBD data.

**Registered Repair Facility** means a business, which employs a Registered Emissions Repair Technician for the purposes of performing emissions repairs and registered with Mass DEP.

**Registered Emissions Repair Technician** means a person who meets Mass DEP’s registration requirements for knowledge of how to diagnose and repair emissions test failures and is registered with Mass DEP.

**RPM** means engine Revolutions Per Minute.

**SAE** means the Society of Automotive Engineers.

**SAE J1667 Opacity Test** means the Snap-Acceleration Smoke Test Procedure for all diesel vehicles with a GVWR greater than 10,000 pounds and not otherwise subject to an OBD test are subject to the SAE J1667 opacity test.

**Safety Test** means all of the procedures required to determine whether a vehicle meets the safety standards established by the RMV.

**Semi-Trailer** means a trailer designed and used in combination with a tractor so some part of the weight of the trailer and that of its load rests upon, and is carried by, the tractor.

**Subject Vehicle** means a motor vehicle or nonmotorized equipment required to receive an inspection pursuant to Mass DEP and RMV regulations.

**Tactical Military Vehicle** means a motor vehicle 1) owned by the U.S. Department of Defense and/or the U.S. Military services and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations, and 2) is excluded from regulation under 40 CFR Part 85, subpart R, section 85.1703, and under the federal national security exemption, 40 CFR, subpart R, sections 85.1702(a) (2), 85.1704 (b), 85.1708, and 85.1710.

**Tampering** means the act of a person to remove or render inoperative any device or element of design installed on or in a motor vehicle in compliance with regulations under the Federal Clean Air Act.

**TC** means Turbocharger.

**TWC** means Three Way Catalytic Converter. Which Oxidizes HC and CO and reduces NOx.
**Turn-Away Document** means a document created by a workstation and provided to an operator by an inspection station explaining the reason(s) a particular vehicle may not be tested.

**VID** means Vehicle Information Database.

**VIN** means Vehicle Identification Number which is a unique number assigned to each vehicle. Typically, this is assigned by the vehicle manufacturer and identifies specific vehicle characteristics, such as make, model year, engine family, and the particular vehicle itself. RMV and other agencies, states, or jurisdictions may assign a VIN for special purposes including, but not limited to, salvaged vehicles of Kit Cars.

**VIN Decoder** means a software application that decodes the 17 digit standardized VIN to reveal the vehicle’s model year, manufacturer, model name, engine family, and, for trucks only, GVWR range.

**VIR** means Vehicle Inspection Report supplied by an Inspection Station to a motorist at the conclusion of an inspection that provides information regarding the results of the inspection.

**VLT** means Vehicle Lookup Table which contains all common vehicles starting with model year 1973, and all OBD equipped vehicles certified by the EPA of the California Air Resources Board by model year, make, model name, type (car or truck), number of cylinders, engine displacement, and transmission type.

**VMI** means Vehicle Maintenance Initiative which is the portion of the Program designed to support repair technician, assist technicians with difficult to repair vehicles, and monitor repair performance to ensure that the repair industry is ready to serve motorists’ needs for emissions repairs.

**Windshield Sticker** means a written instrument or device, which indicates that the required inspection has been performed. This will be affixed to the inside lower right corner of the windshield on the passenger side once an inspection has been completed.

**Workstation** means the complete set of hardware, software, consumables, and accessories located at the Inspector Station, and used to conduct safety and emissions tests, including equipment for quality control.
## Commercial Vehicle Inspection Checklist

All safety related equipment defects must be corrected prior to continued operation

Free reinspection at same station within sixty (60) calendar days

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<th>Exhaust System</th>
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<td>Exhaust system leaks or a bus exhaust system leaking or discharging to the atmosphere.</td>
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<tr>
<td>Exhaust system that is likely to result in burning, charring, or damaging the electrical wiring, the fuel supply, or any combustible part of the motor vehicle</td>
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Exhaust system tight and free of leaks and securely fastened. ................................................. 3-35 ........................................... □ □ □
Visible black or blue exhaust emissions at approximately 1,000 to 1,500 RPM's. .......................... 3-35 ............................... □ □ □

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Inspector Name: __________________________________________ Inspector Number: ________________________________

Model Year: ___________ Make: ___________ Model Name: ___________

Vehicle Type: ______________ Vehicle Body Type: __________________________

Engine Make: __________ Engine Year: ___________ No. of Cylinders: ______

Engine Size/Displacement: _______ V.I.N. ________________________________