

PERIODIC INSPECTION MANUAL



Agency of Transportation

Department of Motor Vehicles

120 State Street

Montpelier, Vermont 05603-0001

dmv.vermont.gov

Official Inspection Station Owner/Operator and Certified Inspection Mechanics:

As an official inspection station and/or a certified inspection mechanic, you are agents of the State of Vermont's Department of Motor Vehicles (DMV). The expectation is that all agents will uphold the standards outlined in this rule and educate the customer regarding any relevant rejection or advisory inspection criteria outlined in this manual.

The procedures outlined herein should be carefully studied and frequently reviewed by applicable employees of your organization. Be thoroughly familiar with all the provisions, regulations and laws contained herein, as full compliance will be required of all concerned.

Failure to comply with all provisions, regulations, and laws pertaining to motor vehicle inspections may result in the assessment of administrative penalties, a fine, and/or suspension or revocation of the mechanic's certification or the appointment of an inspection station.

Your station number or mechanic's certification number should be placed on all correspondence pertaining to inspections, and such communications should be addressed to:

**Agency of Transportation
Department of Motor Vehicles
Enforcement & Safety Division
Inspection Unit
120 State Street
Montpelier, VT 05603-0001**

Any inspection station or mechanic needing assistance regarding inspection requirements may contact the Enforcement and Safety Division of the Department of Motor Vehicles at (802) 828-2094 between 7:45 A.M. and 4:30 P.M., Monday through Friday, except holidays.

Effective Date

[19-P63](#) - Agency of Transportation/Rules Governing Inspection of Motor Vehicles shall become effective January 1, 2020.

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DEFINITIONS

49 C.F.R. 570: The Federal Motor Vehicle Safety Standards Code of Federal Regulations as it relates to the inspection of motor vehicles. ([23 V.S.A. § 1001\(b\)](#))

Antique Vehicle: Exhibition vehicles 25 years old or older that qualify for “Antique Car” number plates. ([DMV Rules](#))

Authorized Emergency Vehicle: A fire department vehicle, police vehicle, public or private ambulance, and a vehicle to which a permit has been issued pursuant to subdivision 1252(a)(1) or (2) of this title. ([23 V.S.A. § 4\(1\)](#))

Autocycle: A three-wheeled motorcycle:

1. In which the occupants sit with their legs forward.
2. That is designed to be controlled with a steering wheel and pedals.
3. That is equipped with safety belts for all occupants.

Automated Vehicle Inspection Program (AVIP): The hardware and software that collectively allow for the Inspection Program to collect and disseminate information electronically. ([23 V.S.A. § 1222](#), [23 V.S.A. § 1229](#))

Certificate of Inspection: The nontransferable inspection sticker (and accompanying number of expiration month) that is issued by an inspection mechanic to a vehicle to certify the vehicle has successfully passed all the state's inspection requirements. Any lost certificate of inspection must be reported to the DMV immediately. All voided inspections must be documented in the AVIP. All voided stickers are to be returned to the Enforcement and Safety Division of the DMV. (23 V.S.A. § [1222](#), [1223](#), [1224](#),[1282](#))

Certified Inspection Mechanic: Any individual who is at least 18 years of age and has successfully completed the certified inspection mechanic exam, which indicates that the individual is qualified and capable of conducting safety and emissions inspections of the vehicle(s) for which he/she is certified. (23 V.S.A. § [1227](#))

Commercial Fleet Inspection Station: A company or business that has been designated by the commissioner as an official commercial fleet inspection station. A commercial fleet inspection station must have 5 or more motor vehicles registered in the name of the company or business and meet all the requirements for designation as an official inspection station. Commercial fleet inspection stations are authorized to inspect only those vehicles registered to the company or business. ([23 V.S.A. §4 \(64\)](#))

Condition of Vehicle: A motor vehicle, operated on any highway, must be in good mechanical condition and must be properly equipped. ([23 V.S.A. §1221](#))

Emergency Warning Lamps: Lamps that provide a flashing light to identify an authorized vehicle on an emergency mission. The emergency signal may be a rotating beacon or pairs of alternately or simultaneously flashing lamp(s). (23 V.S.A. § [1251](#), [1252](#), [1253](#), [1255](#))

Exhibition: A designation for any motor vehicle maintained solely for use as an exhibit at club activities, parades, and other functions of public interest. These could include trailers as well as other vehicles and might be early-model or late-model vehicles or vehicles of special design, such as trick cars or replicas of railroad locomotives or railroad box cars. ([23 V.S.A. § 373](#))

Frame: The main longitudinal structural members of the chassis of the vehicle or, for vehicles with unitized body construction, the lowest main longitudinal structural members of the body of the vehicle, which may include rocker panels, cross members, body mounts, engine mounts, and engine cradle.

Fully Enclosed Autocycle: An autocycle equipped with a windshield and full top and side enclosures capable of supporting the vehicle's weight and of protecting the occupants when the vehicle is resting on the enclosures.

GVWR: The manufacturer's specified gross vehicle weight rating (maximum design loaded weight of a single vehicle), whether or not the vehicle is modified by use of parts installed by the original manufacturer or a secondary manufacturer.

Hearing: A proceeding where parties present evidence in front of a hearing officer, who makes a decision based on preponderance of the evidence and the law. ([23 V.S.A. § 105](#), [23 V.S.A. § 106](#), [23 V.S.A. § 107](#))

Heavy Truck: Gross vehicle weight rating (GVWR) greater than 10,000 pounds.

Inspection Area: The specifically approved area of an inspection station inside a building, in which all vehicle inspections must be conducted unless prior approval has been obtained from the DMV. Trailers may be inspected outside the building. The road test must be conducted outside unless the station is equipped with appropriate automated road testing equipment with prior approval from the DMV. The inspection area is also the only location at which the certificate of inspection must be issued and affixed to the vehicle. ([23 V.S.A. § 1222](#))

Inspection Books: The books containing the certificates of inspection. ([23 V.S.A. § 1222](#), [1224](#))

Inspection Fee: If a fee is charged, it must be determined by the time actually spent to complete the inspection multiplied by the posted hourly rate, or it must be a posted flat rate fee based upon the average time to conduct a complete inspection. ([23 V.S.A. § 1222 \(b\)](#))

Indicator Lamps: Lamps visible to the operator of a vehicle that indicate:

1. Appropriate electrical circuits are in operation.
2. Malfunction of vehicle performance.
3. Requirement for remedial action by the operator of the vehicle (if installed by manufacturer).

Inspection Period: The 2-month period within which a certificate of inspection may be issued.

1. All motor vehicles must be inspected once a year. ([23 V.S.A. § 1222](#))

2. School buses must be inspected three times yearly: between July/August, November/December, and February/March. (23 V.S.A. § [1282](#))
3. Motor buses must be inspected twice yearly, at 6-month intervals. (23 V.S.A. § [1222](#))

Inspection Record: An inspection record includes the inspection certificate, information entered into AVIP, and the Vehicle Inspection Report (VIR). ([23 V.S.A. § 1222](#))

Inspection Station License: The certificate of designation issued by the DMV to verify that the facility is properly equipped and has adequate space and qualified personnel to conduct state inspection of vehicles as stated on the certificate. The license must be conspicuously displayed at the place for which it has been issued. It is valid only for the official inspection station in whose name it has been issued and for transacting business only at the designated place. ([23 V.S.A. § 1222](#))

Inspection Station Supervisor: Any person designated by the inspection station owner to supervise/manage the operation of the respective inspection station.

Kit-Car: A vehicle with a commercially manufactured body and/or body and frame that may resemble a regularly manufactured vehicle or whose body may be of a unique design but is manufactured to fit on a commercially manufactured frame.

Motor Bus: Any motor vehicle with a seating capacity of more than seven persons, other than a street car, operated upon the public streets and highways along a regular route and in such operation receiving, discharging, and transporting passengers for hire. This does not apply to a transportation service for which passengers determine the route and destination, nor does it apply to cooperative-use transportation.

Motor-Driven Cycle: Any vehicle that is equipped with two or three wheels, a power source providing up to a maximum of 2 brake horsepower and having a maximum piston or rotor displacement of 50 cubic centimeters, if a combustion engine is used, which will propel the vehicle, unassisted, at a speed not to exceed 30 MPH on a level road surface and that is equipped with a power drive system that functions directly or automatically only, not requiring clutching or shifting by the operator after the drive system is engaged. An electric personal assistive mobility device is not a motor-driven cycle.

Motorcycle: Any motor-driven vehicle having a seat or saddle for the rider and designed to travel on not more than three wheels in contact with the ground, excluding motor-driven cycles, golf carts, track-driven vehicles, tractors, electric personal assistive mobility devices, and vehicles on which the operator and passengers ride within an enclosed cab.

Multipurpose Passenger Vehicle (MPV): A motor vehicle with motive power, except a trailer, that is designed to carry 10 persons or fewer, and that is constructed either on a truck chassis or with special features for occasional off-road operation.

Municipal Fleet Inspection Station: A municipality that has been designated as an official municipal fleet inspection station, provided it has motor vehicles registered in the name of the municipality and meets all the requirements for designation as an official inspection station.

Municipal fleet inspection stations are authorized to inspect only those vehicles registered to the municipality. ([23 V.S.A. §4 \(65\)](#))

Neighborhood Electric Vehicle: A self-propelled, electrically powered motor vehicle that: ([23 V.S.A. § 4\(73\)](#))

1. Is emission free.
2. Is designed to carry four or fewer persons.
3. Is designed to be, and is, operated at speeds of 25 MPH or less.
4. Has at least four wheels in contact with the ground.
5. Has a gross vehicle weight rating less than 3,000 pounds.
6. Conforms to minimum safety equipment requirements as adopted in the Federal Motor Vehicle Safety Standard No. 500, Low-Speed Vehicles. ([49 CFR. 571.500](#))

Official Inspection Station: A government agency owned or leased or privately owned or leased facility designated and licensed by the DMV to conduct state inspections of vehicles as stated on the license certificate. ([23 V.S.A. § 1222](#))

Periodic Inspection Manual: Those books, pamphlets, or bulletins posted online or distributed electronically by the DMV containing the rules that govern the actions of official inspection stations and certified inspection mechanics to determine whether the motor vehicles are properly equipped and maintained in good mechanical condition. ([23 V.S.A. § 1001](#))

Proof of Valid Insurance (DMV Rules, 23 V.S.A. § 800(c)): The following are considered proof of valid insurance:

1. An insurance identification card.
2. The declaration page from the policy or a photocopy of that page.
3. A temporary card or binder, or a photocopy of a binder.
4. A self-insurance card.
5. Evidence of a bond issued by a surety company.
6. Portable electronic device.
7. Oral confirmation from insurance carrier to mechanic by phone.

Registration: The authority for a vehicle to be operated on a public highway as evidenced by an identifying certificate and plate or plates issued by a governmental entity. A temporary registration plate qualifies as a registration. ([23 V.S.A. § 301, 304](#))

Replica: A commercially manufactured body or frame resembling that of the original vehicle or duplicated vehicle and retaining the basic style and dimensions as originally manufactured and whose major components, such as grill shell, hood, and doors are readily interchangeable with the original components.

Revoke: To withdraw permanently by formal action of the DMV any license, certification, registration, or privilege issued or granted by the DMV. ([DMV Rules, 23 V.S.A. § 1228](#))

SAE: The Society of Automotive Engineers International, a professional organization for engineering professionals in the aerospace, automotive, and commercial vehicle industries. The

SAE is a standards-development organization for the engineering of powered vehicles of all kinds, including cars, trucks, boats, aircraft, and others.

SAE Lighting Identification Code: A series of standardized markings for lighting devices that a manufacturer or supplier may use to mark its product to indicate the SAE lighting standard(s) to which the device is designed to conform. The code is not intended to limit the manufacturer or supplier in applying other markings to the devices.

School Bus: Any motor vehicle used to transport children to or from school or in connection with school activities.

1. **Type I school bus** means a school bus designed to transport more than 15 passengers, including the operator.
2. **Type II school bus** means a school bus designed to transport more than 10 and less than 16 passengers, including the operator.

Sealed Beam Headlamp Assembly: A major lighting device used to provide general illumination ahead of the vehicle. It consists of the following:

1. One or more sealed beam units (bulb assembly).
2. Means for mounting securely to the vehicle.
3. Means to permit required aim adjustment.

Secure Location: A lockable desk, file cabinet, strongbox, safe, or other similar nonportable device where all certificates of inspection must be kept safe and secure when in the possession of an official inspection station and/or sticker replacement agent.

Serious Violation:

1. Three or more violations of Category 1, Category 2, Category 3, Category 4, or any combination thereof occurring during the same inspection of a single vehicle.
2. Three or more violations of Category 1, Category 2, Category 3, Category 4, or any combination thereof occurring during inspections conducted by a fleet inspection station during the same inspection period.

State Inspection Requirements: Rules, as described in the Periodic Inspection Manual distributed by the DMV, used to determine whether motor vehicles are properly equipped and maintained in good mechanical condition. ([23 V.S.A. § 1001](#), [1222](#))

Street Rod: A vehicle with body and frame that were manufactured before the year 1949 and that has been modified for safe road use, or a replica thereof that resembles an original pre-1949 vehicle and has also been modified for safe road use. For the purposes of this section, “modified” means, but is not limited to, a substantial and material alteration or replacement of the engine, drivetrain, suspension, or brake system or alteration of the body, which may be chopped, channeled, sectioned, filled, or otherwise changed dimensionally from the original manufactured body.

Note: Any such modification may be made only if said modification equals, improves, or enhances the safety aspects of the original equipment so modified.

Suspend: To withdraw temporarily by formal action of the DMV any license, certification, registration, or privilege issued or granted by the DMV. ([DMV Rules](#))

Truck: A motor vehicle with motive power, except a trailer, designed primarily for the transportation of property or special purpose equipment. ([23 V.S.A. § 4\(20\)](#))

Turn Signal Lamps: Lamps that provide a flashing warning light to indicate the intended direction of the turn (1955 and newer models). Turn signal lamps approved for use on pleasure cars, trucks, and buses are as follows: ([23 V.S.A. § 1249](#))

1. At or near the front, one amber on each side of the vertical centerline at the same height and as far apart as practical.
2. On the rear, one red or amber on each side of the vertical centerline at the same height and as far apart as practical.
3. Turn signal lamps must be mounted with the center of the lamp not less than 15 inches nor more than 83 inches above the road surface.

Vehicle Identification Number (VIN): A combination of alphanumeric characters that the manufacturer assigns to a vehicle for identification purposes or, in the absence of a manufacturer-assigned number, that the DMV or other government agency assigns to a vehicle for identification purposes. ([23 V.S.A. § 1702](#))

Vehicle Inspection Report (VIR): A report made available to the motoring public, either in hard copy or by electronic means, that provides the results of the inspection performed and/or other information that may be useful to the consumer, such as recalls that pertain to the vehicle.

GENERAL INFORMATION

PERIODIC SAFETY INSPECTION

Every motor vehicle registered in this state must be inspected at a station designated as an official inspection station by an inspection mechanic certified by the commissioner of the DMV. If a motor vehicle is found to be unsafe or unfit for operation or improperly equipped, it must be put in a safe condition and properly equipped before an official inspection sticker is affixed to the vehicle. All vehicles are required to be road tested as part of the inspection. The purpose of the road test is to determine whether the steering, suspension, braking, speedometer, and odometer of the vehicle function as designed and meet the requirements outlined in the inspection manual. [23 V.S.A. § 1222](#).

COURTESY INSPECTION (OUT-OF-STATE VEHICLES)

Vehicles registered out of state may be inspected in Vermont provided they meet all requirements outlined in the Vermont Periodic Inspection Manual. [23 V.S.A. § 1222](#).

INSPECTION FEES AND REPAIR DOCUMENTATION

If a charge or fee is to be made for an inspection, the official inspection station must make available a work order, invoice, and a Vehicle Inspection Report (VIR) completed through Automated Vehicle Inspection Program (AVIP), regardless of the vehicle passing or failing a Vermont Safety Inspection.

If a charge or fee is to be made for an inspection, the official inspection station must post its fee or the hourly rate that is charged for the inspection and present an itemized bill or invoice to the owner or person presenting the motor vehicle for inspection, and such itemized bill must contain the following information:

1. Charges for parts and materials installed for inspection
2. Labor charge (including time spent and hourly rate charged if charging by a posted hourly rate, whether or not the vehicle passed inspection)
3. Flat rate fee if charging by a posted flat rate for inspection

A copy of that itemized bill/invoice must be maintained and available to any authorized agent of the commissioner of the DMV for a period of 3 years.

The sign posting the charge or the hourly rate for inspections must be prominently posted near the station's certification as an Official Vermont Inspection Station.

REPORTS, CERTIFICATES, AND SUPPLIES

1. Official certificates and inspection stickers will be furnished at initial setup for new stations by the DMV, and additional supplies may be forwarded upon request.
2. For each inspection sticker issued by the DMV, the statutory fee must be paid to the DMV, except state and municipal inspection stations when inspecting state and municipal vehicles.
3. All unused (previous year) stickers must be returned before the end of the last day of February. If the unused stickers are not returned by this date, the inspection station will be subject to a penalty as provided and no refund will be issued.
4. Refunds will not be issued for used, voided, lost, or stolen stickers.

REQUIREMENTS FOR DESIGNATION: SPECIFICATIONS

APPLICATION FOR APPOINTMENT

1. Inspection stations are appointed, and mechanic's certifications are issued solely for the benefit of the motoring public. Before a certificate of designation, as an official inspection station may be issued, an applicant must have an approved place of business. Recommendation for designation as an official inspection station must be made by a DMV investigator. [23 V.S.A. § 1222](#).
2. All appointments are provisional and are conditional upon the proper conduct of the work and compliance with departmental regulations as specified in this manual.
3. All applications for appointment as an official inspection station must indicate the types of vehicle(s) to be inspected and must be submitted to the DMV on the form provided by the DMV and accompanied by proof of zoning compliance ([VN-016 Inspection Station Application](#)).
4. Any changes (not to include ownership changes) must be submitted to the DMV on the form provided by the DMV. If the change is a location change, it must be accompanied by proof of zoning compliance.
5. Inspection stations and licensed replacement stations need to be physically located in Vermont.
6. For appointment as an official inspection station, the applicant must meet the following requirements:
 - a. For initial inspection station appointment, the applicant must have no previous or pending criminal convictions for extortion, forgery, fraud-related crimes, larceny, or embezzlement.

- b. The applicant must have had no previous record of willful violations of inspection laws or regulations in this or any other jurisdiction.
- c. The applicant must have had no civil judgments that are the result of willful intent to commit fraud or misrepresentation.
- d. The applicant must have had no history of violations of issuing nonnegotiable, insufficient funds, account closed, or counterfeit checks within the past 5 years.

Note: Upon designation, the certificate of authorization as an inspection station must be prominently displayed under glass or clear plastic. In addition, the station must prominently display an exterior sign with the words, “Official Vermont Inspection Station” on it.

TOOLS AND EQUIPMENT REQUIREMENTS

Certain vehicle makes or models may require specific tools or devices unique to that vehicle to complete a proper inspection. It is the responsibility of the station owner or operator to be properly equipped and to use those tools or devices, if required, to inspect a specific type of vehicle. At a minimum, the following is required:

1. Automotive lift capable of hoisting whatever vehicle is undergoing inspection
2. Adequate tools for general repairs - as required
3. Approved floor
4. Approved headlamp-aiming device
5. Approved jacking facilities
6. Appropriate measuring devices
7. Ball joint dial indicator
8. Tire pressure gauge
9. Tire tread depth gauge
10. Computer software and hardware authorized by the commissioner to conduct electronic safety inspections, emissions inspections and to electronically transmit recorded data (i.e., AVIP, scan tool, printer, internet connection, router, etc.)

CERTIFIED INSPECTION MECHANIC REQUIREMENTS ([23 V.S.A. § 1227](#)).

1. Any person conducting inspections must be 18 or more years of age and must be certified by the commissioner. An uncertified person employed as an inspection mechanic may perform inspections during the first 30 days that he or she is employed by the inspection station under the direct supervision of the station supervisor or a certified mechanic.
2. The credentialing training program and the examination must be in a format approved by the commissioner of the DMV.
3. When reasonable to do so, a DMV investigator may require a certified inspection mechanic to submit to a practical proficiency test (i.e., mock inspection). A certified inspection mechanic who refuses to submit to such request must surrender their mechanic certification immediately.
4. Periodic inspections may be performed only by mechanics who have been certified by the commissioner.
5. The mechanic signing the VIR in the AVIP system must have conducted the inspection of the vehicle and be responsible for the road test.
6. If the road test is performed by an uncertified person employed as an inspection mechanic, that person must hold a valid operator license in the proper class and/or endorsement for the vehicle being inspected. The uncertified person must be accompanied by a certified inspection mechanic during the road test. Both must sign the VIR in the AVIP system at the completion of the exam.
7. Individuals, 16 or 17 years of age who have completed an approved vocational school inspection mechanic credentialing program may be issued a certification number for the AVIP system. Upon being issued a certification number, these individuals may perform vehicle inspections except for the vehicle road test (a fully certified inspection mechanic must perform this test). Additionally, their inspection must be approved and signed off by a fully certified inspection mechanic, vouching for their work. These requirements will no longer apply on or after the licensee's 18th birthday.

SPACE REQUIREMENTS

1. Available level space within the approved area for inspection and repair is a requirement for obtaining and retaining an appointment as an official inspection station. All inspections must be conducted in the approved area unless specific regulations state otherwise.
2. Inspection area is defined as "the designated space approved for inspection purposes." Approval cannot be granted nor permitted to continue unless full compliance of the following requirements are maintained.
 - a. A station using an approved headlamp-testing machine or an approved mechanical aimer must have at least 25 feet of adequate floor within the approved area.

- b. An adequate floor must not slope other than to the front or rear as the vehicle would sit to be inspected. The rate of slope must be uniform and no greater than 3 inches in 25 feet.
 - c. When a standard headlamp-testing screen is to be used, there must be at least 45 feet of floor space within the approved area. The first 25 feet must be an adequate floor.
 - d. Floors must be hard surface of a type approved by the DMV (concrete or blacktop).
 - e. The floor area used for inspection must be clean and clear of obstructions and all necessary equipment in place and ready for use.
 - f. Lifts are required for new stations.
 - g. A center drain is permitted, providing the sloped area on all sides of the drain is a uniform pitch, and the floor is clearly marked to indicate where the vehicle must be parked for inspection.
 - h. Door tracks cannot be included in the space requirements.
 - i. A telephone line and internet connection must be available to conduct electronic safety and emissions inspections, at the approved inspection location.
3. Any trailer, semi-trailer, or trailer coach may be inspected outside of the inspection station's building and need not be inside the building for inspection purposes.
4. All motor homes and motor trucks, such as truck cranes, trucks with permanently mounted well-drilling machines, or any type of motor truck which is not able, due to its height, width, or length to enter an inspection station's building, may be inspected outside of the inspection station's building on the station's property, provided the station's property has an approved and properly marked level surface area for such inspection, as defined.

Note: Prior approval is MANDATORY for an exterior inspection area. An exterior adequate level surface may be either concrete or blacktop and must not slope other than to the front or rear as a vehicle would sit to be inspected. The rate of slope must be uniform and no greater than 3 inches in 25 feet. The designated area must be a minimum of 10 feet by 25 feet. The vehicle being inspected must be completely within the approved area. The approved area must be visibly marked. Upon approval of this outside inspection area, the DMV will issue a new inspection certificate recognizing the approved outside inspection area.

REGULAR INSPECTION STATIONS – HOURS OF OPERATION

Each station must, on a weekly basis, be open for a total of at least 35 hours. Holidays and emergencies are exceptions. The posted hours of operation must be visible to the public. The station will be subject to random visits by authorized agents of the commissioner of the DMV.

A station may be closed temporarily, such as for an extended vacation, provided the owner or authorized agent obtains prior approval from the area investigator, and notice should be posted in advance for customers.

FLEET INSPECTION STATIONS

A company or business may be designated as an Official Fleet Inspection Station, provided it has 5 (five) or more motor vehicles registered in the name of the company or business and meets all the requirements for designation as an official inspection station. Fleet stations are authorized to inspect **only** those vehicles registered to the company or fleet.

Fleet stations need only be open the hours necessary for their operation, but if not open during normal business hours, they must notify the area investigator of their days/hours of operation.

TECHNICAL CENTER CREDENTIALING PROGRAM

The DMV partners with several technical centers throughout Vermont that train students to become certified inspection mechanics. Technical centers participating in the DMV's credentialing program must be approved to conduct vehicle inspections before participating in the credentialing program. Technical centers must be approved in the same manner as regular inspection stations. Technical centers approved for the credentialing program are not required to post hours of operation or any type of fee, as these stations/training facilities exist solely for credentialing purposes.

INSPECTION STICKER SECURITY

When not being issued, inspection stickers must be kept in a locked drawer, cabinet, or other device that is not easily moved or portable to prevent theft and limit access to only those persons authorized to inspect vehicles. The mechanism used to secure inspection stickers must be approved by a DMV investigator.

STICKER REPLACEMENT AGENTS

Any firm doing a substantial business in the replacement of automotive windshields and desiring to act as an agent of the DMV for the issuance of replacement inspection stickers must make application for appointment with the DMV. Application forms may be obtained from the DMV. Each applicant will be investigated, and an appointment will be made only if all the requirements are met. Application does not guarantee appointment, and the commissioner may consider the number of replacement sticker agents already within a given area compared to the number of registered motor vehicles in such location and the volume of replacement windshield business done by the applicant in comparison with the cost to the state of setting up and stocking additional agents and will determine if added replacement sticker agents are needed or required.

The statutory fee for each inspection certificate (sticker) applies to replacement stickers.

RULES FOR REPLACEMENT STICKER AGENTS

Any applicant for appointment as a replacement sticker agent must agree to the following:

1. Act as an agent of the DMV in issuing replacement stickers only on a replacement windshield when the original windshield has been destroyed or damaged.
2. Clearly mark replacement stickers with the word "REPLACEMENT" written on the back.
3. Insert the expiration month on the replacement sticker the same as the insert on the regular sticker it replaces.
4. May not conduct a safety inspection of the vehicle. The agent is only attesting that a valid sticker was displayed on the original windshield.
5. May only obtain replacement stickers from the DMV.
6. Copy all the information off the back of the original sticker onto the replacement, if possible, and write the number of the original sticker it replaces on the stub of the replacement. The agent must also record the invoice number for the replacement windshield on the stub. The signature, station name, and number recorded should be that of the replacement station.
7. Retain a copy of the invoice for the replacement windshield for which a replacement sticker has been issued for a period of 1 year and make his/her records accessible to any inspector or other authorized agent of the commissioner or law enforcement officer.
8. Fully comply with the rules relative to the replacement of stickers.
9. Ensure that employees are thoroughly familiar with these rules and have up-to-date copies of them accessible on the premises.
10. Notify the DMV of the names of all employees who are authorized to attach replacement stickers and of any changes in these authorized personnel thereafter and not allow these persons to attach stickers except as provided for in these rules.

11. Keep up-to-date, accurate records in the AVIP portal, as requested by the DMV, and update the portal upon completion of the replacement sticker.
12. Attach replacement stickers only on those vehicles whose windshields have been replaced and were found to have a valid sticker attached at the time of replacement.
13. Assume full responsibility for the security of all stickers provided.
14. When not being issued, inspection stickers must be kept in a locked drawer, cabinet, or other device that is not easily moved or portable to prevent theft and limit access to only those persons authorized to inspect vehicles. The mechanism used to secure inspection stickers must be approved by a DMV investigator.
15. Failure to comply fully with these rules may result in the suspension or revocation of the replacement agent's certificate of appointment and all replacement sticker privileges, in which case the agent must forthwith return to the DMV his/her certificate of appointment, all unused stickers/sticker supplies, and all records pertaining to the issuance of replacement stickers. Failure to comply with this provision may disqualify the agent for reappointment.
16. When a windshield is replaced and a valid replacement inspection sticker is affixed, the original inspection sticker must be removed from the broken windshield, and the word "VOID" must be written on the front. The sticker must then be affixed to the original work invoice and be made available for inspection by DMV for 1 year.

REPLACEMENT BY OFFICIAL INSPECTION STATION

If an official inspection station is replacing a sticker on a vehicle it previously inspected as a result of a windshield being replaced, the replacement sticker can only be affixed to the vehicle when the date of the original inspection and the date the windshield is replaced occurs within the same calendar year. When the station issues a replacement sticker, the sticker must be clearly marked "REPLACEMENT" on the back. Before the station issues a replacement sticker, the customer must show proof the windshield has been replaced, and the station must retain a copy of that proof with its records. The replacement sticker must contain the same numeral insert and inspection information as the original sticker. No safety inspection of the vehicle is to be made when issuing a replacement sticker. The station issuing the replacement sticker must record the replacement and original sticker serial numbers on the customer invoice. The statutory fee applies to all replacement stickers.

GENERAL PROVISIONS

CHANGES: NAME, OWNERSHIP, AND/OR LOCATION

1. Any change in name, ownership, or location of any official inspection station cancels the designation of that station. The DMV - Inspection Unit must be notified immediately in writing.
2. An inspection station, upon going out of business, must immediately return to the DMV - Inspection Unit the certificate of designation with all unused inspection stickers.

SUPPLIES (STICKERS-NUMERALS)

1. It is the responsibility of the station to ensure it has the necessary supplies to conduct business. The State will identify the proper mechanism for stations to verify sufficient funding and how to obtain necessary supplies.
2. Before confirming receipt of supplies such as stickers, replacement parts, etc. it is the responsibility of the station to ensure the order is complete and meets necessary quality standards. [23 V.S.A. § 1224](#)
3. A station must not lend, give, sell, or otherwise provide inspection stickers to any other station, nor borrow, purchase, or otherwise acquire stickers from any other inspection station.
4. Glass replacement stations may retain the stickers and numerals for replacement during the full year, and fleet stations may also retain the stickers and numerals to enable them to coordinate expiration of inspection for their fleet vehicles.

AUTOMATED VEHICLE INSPECTION PROGRAM (AVIP)

1. All inspections must be conducted using the hardware and software from the designated vendor or as determined by the commissioner
2. Inspection stations must acquire their hardware and software from the designated vendor or as determined by the commissioner.
3. An inspection station must enter into an agreement with the AVIP vendor, as designated by the commissioner, and abide by the terms of that agreement.

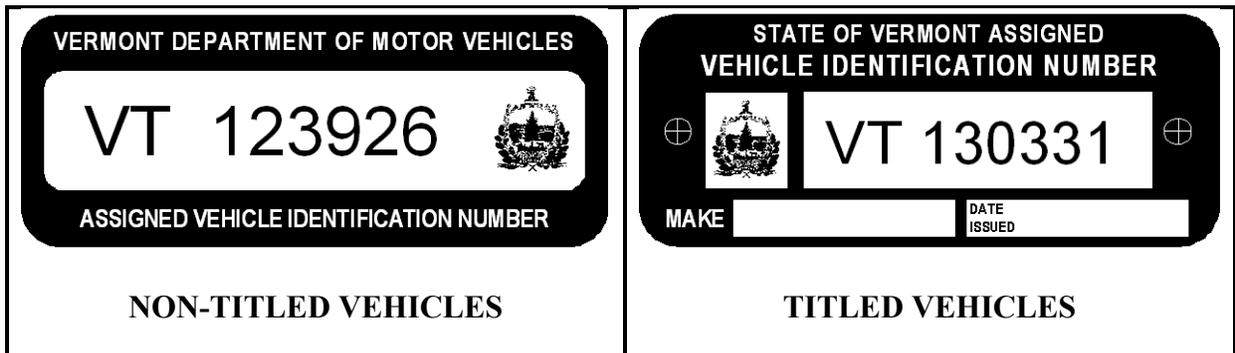
DETAILED INSTRUCTIONS: PROCEDURES AND REQUIREMENTS

VIN PLACEMENT, ASSIGNMENT, AND LOCATION

1. When any part of the VIN on the registration certificate does not correspond exactly with the VIN attached to the vehicle, the customer should be referred to the DMV to have the incorrect certificate corrected.
2. If the vehicle has no VIN or the VIN has been defaced, destroyed, or detached, the owner must apply to the DMV for an assigned Vermont VIN. **(See instructions for attachment of assigned VIN tags below.)** No official inspection sticker is to be attached to the vehicle that has no VIN until the assigned VIN has been presented or attached in the manner prescribed. If the VIN appears to have been tampered with, the customer should be directed to file a complaint with his/her local police department. 23 V.S.A. § [1704](#), [1701](#).

Note: The VIN referred to in this section is the public VIN (PVIN) located on the vehicle dashboard.

3. Assigned VINs ([23 V.S.A. § 1702](#)):
 - a. Assigned Number Tags: Must be obtained directly from the DMV.
 - b. Attachment: Must be made by an inspector or mechanic employed by an official inspection station. A specific location has been approved for each type of vehicle, as follows:



Trailers:

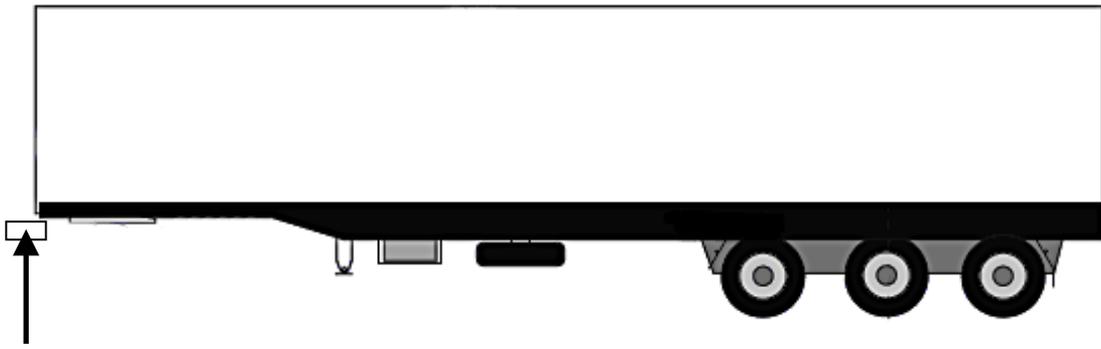
1. Tongue Type: On the left (road) side of the tongue or frame within 12 inches of the hitch assembly at a level as close to that of the towing ball as possible.
2. Trailer Coach: On the lower left corner of the (road) side of the body on a level as close as possible to that of the towing ball.

3. Fifth Wheel Type: On the lower left (road) side of the frame or body in a position as close as possible and at a level equal to the top of the fifth wheel mechanism.

Note: All trailers should be numbered in order so the VIN can be easily read by a person checking the hitch or attachment of the vehicle. All assigned VIN tags should be attached to the smoothest and most durable surface available within the proper location area.

Attach Vermont-assigned VINs in the areas marked by the arrow and box.





Semi-Trailer



Trailer Coach or Camper



Fifth Wheel Camper

Rebuilt, Reconstructed, or Homemade Vehicles (Cars and Trucks):

1. The VIN plate will be attached to the left front door pillar post high enough that it may be easily read when opening the door.
2. The assigned VIN tag must be located where it can be easily read from the operator's side of the vehicle. The type and rigidity of the material should be considered. All tags should be on an outside surface that is smooth and clean. The tag should be right side up, if possible, and away from any place where it will experience any kind of wear.



LOST, DAMAGED, WORN, OR FADED PLATE

Whenever a registration plate has been lost, damaged, worn, or faded to the extent that it is not plainly legible, the customer should be referred to the DMV to acquire a duplicate plate using [DMV form VD-016](#). All vehicles must be inspected with at least one plate.

SCHEDULE OF PENALTIES, SUSPENSION, AND REVOCATION

Please refer to [APPENDIX A](#) for a full list of administrative penalties.

If an inspection station owner/operator, and/or certified inspection mechanic wishes to contest a warning, administrative penalty, suspension, or revocation, it is his/her right to have a hearing before a hearing examiner of the Transportation Policy and Hearing Section, provided the inspection station owner/operator or certified inspection mechanic submits a request for such hearing within 15 days of the notice, in writing, to the Agency of Transportation, Transportation Policy and Hearing Section. When a hearing is requested, the warning, suspension, or administrative penalty is to be held in abeyance until the decision of the hearing, unless the commissioner has cause to believe the inspection station or certified inspection mechanic will continue to act in such a manner as to be detrimental to the state or any existing or potential customers, in which case the warning, suspension, or administrative penalty will become effective as indicated in the original order.

CAUSE FOR SUSPENSION/REVOCATION

The commissioner of the DMV, may revoke or suspend an Inspection Mechanic certification and/or an official inspection station designation for circumstances outlined by DMV Rules, [CVR 14-050-031](#), [23 V.S.A. § 1228](#), and [23 V.S.A. § 1227](#).

On the effective date of a suspension or revocation, an investigator must pick up any inspection stickers or official inspection certificates from the station or mechanic whose designation has been suspended.

CAUSE FOR ADMINISTRATIVE PENALTY AND SUSPENSION

Schedule: Failure to comply with the provisions of this section will be considered sufficient cause for suspension of any or all inspection mechanic or inspection station certificates. Administrative penalties or suspensions may be imposed upon the inspection station or inspection mechanic, or both, that had responsibility for the violation. All requests for penalties or suspensions will be reviewed and approved by the commissioner before being issued. An inspection station owner/operator or certified inspection mechanic to whom an administrative penalty or suspension has been issued will be afforded the opportunity for a hearing. In addition, violators may be subject to criminal or civil prosecution.

Inspection Station: After the full term of suspension has been served, inspection privileges will not be restored until an application for reappointment has been reviewed, and the station has been approved by the DMV.

Certified Inspection Mechanic: After the full term of suspension has been served, the inspection mechanic certificate will be restored.

Warning: The DMV or authorized agent of the commissioner of the DMV in its discretion may issue verbal or written warnings to the inspection station or certified inspection mechanic for any violation in Categories 1 through 5. In either case, written documentation and a written acknowledgment of receipt of the warning must be submitted to the DMV by the authorized agent of the commissioner of the DMV.

Subsequent: The determination of second and subsequent violations is made on the basis of previous violations in the same category.

Multiple Violations: In the case of multiple violations considered at one time, the DMV will impose separate penalties for each violation, as required by schedule, and in its discretion, may direct that any suspensions be served concurrently.

Sale of Business: If an inspection station that is currently suspended is sold or leased to a new owner, an application will be considered provided the suspended parties have no interest whatsoever in the new inspection station.

Failure to Pay the Administrative Penalty: In the case of failure to pay an administrative penalty, the DMV will mail a notice to the inspection station or inspection mechanic at their last known address notifying the inspection station and/or inspection mechanic that failure to pay or otherwise satisfy the administrative penalty within 60 days of the notice will result in suspension of the inspection certificate of the station and/or the mechanic, whichever is appropriate, until the penalty is paid in full or otherwise satisfied. The inspection station or inspection mechanic is entitled to a hearing if requested within 15 days of the notice.

Serious Violation: The commissioner may suspend the certificate of the inspection station or the inspection mechanic or both, whichever is deemed appropriate by the commissioner, in addition to the administrative penalty or penalties set forth in Categories 1 through 5, when a serious violation has occurred. Additionally, the commissioner may revoke the inspection certification of a mechanic who has been found to be stealing or fraudulently gaining stickers for his/her own use or illegal sale.

REGISTRATION AND INSURANCE

Procedure: Examine registration certificate.

Note: A road test on a public highway cannot be conducted unless the vehicle holds a valid registration. Temporary registrations are permissible. [23 V.S.A. § 301](#), [304](#).

Reject vehicle if:

1. Valid **registration certificate** is lost or missing.

Note: The mechanic should advise the owner he/she may be in violation of State Law [23 V.S.A. § 307](#) and should contact DMV to acquire replacement.

2. Vehicle description is not in agreement with registration certificate.
3. Numbers on registration certificate are not in agreement with numbers on license plate(s).

Procedure: Verify insurance coverage ([23 V.S.A. § 801](#), [DMV Rules](#), [23 V.S.A. § 800\(c\)](#)).

Note: To perform a road test on a public highway, the mechanic must verify there is valid insurance on the vehicle being inspected, or the station holds an insurance policy that covers the vehicle for a road test. If the customer has insurance, but no proof is present in the vehicle, the mechanic may call insurance company to verify or may verify by electronic means (cell phone).

Reject vehicle if:

1. The vehicle **is not** covered by one of the insurance methods described above.
2. The station does not have insurance, and the mechanic cannot **verify** the vehicle is covered by valid insurance.

Advise customer if:

If there is no proof of insurance in the vehicle, the mechanic should advise the customer he/she may be in violation of State Law [23 V.S.A. § 801](#) and should contact his/her insurance company to obtain proof of insurance.

Procedure: Examine the Vehicle Identification Number (VIN).

Reject vehicle if:

1. No VIN can be located on the vehicle.

2. The VIN is not in agreement with the registration certificate.

Advise customer if:

1. If the VIN has been removed or tampered with, the customer should contact his/her local police department to file a report. [23 V.S.A. § 1703](#), [1704](#).

Procedure: Examine License plates.

Reject vehicle if:

1. There are no license plate(s) attached to the vehicle.

Note: If there is only one plate attached to the vehicle, it should be on the rear.

Advise customer if:

1. If the front license plate is missing, the mechanic must advise the customer he/she may be in violation of State Law [23 V.S.A. § 511](#) and should contact the DMV to acquire a replacement plate using [DMV form VD-016](#).
2. The license plate(s) is not securely mounted or is hanging from the mounting bracket.
3. The plate(s) are covered, worn, or faded in a way that inhibits clearly viewing the number.
4. If a valid **registration sticker** is not affixed to the lower right corner of the rear plate, the mechanic must advise the customer he/she may be in violation of State Law [23 V.S.A. § 511](#), and the sticker should be relocated to the appropriate location.

PLEASURE

CAR AND

LIGHT

TRUCK

PLEASURE CAR AND LIGHT TRUCK

INSPECTION STICKER PLACEMENT

Inspection stickers must be affixed to a vehicle's windshield in a location specified by the commissioner of the DMV.

WHEELS AND TIRES

Procedure: Examine tires.

Reject vehicle if:

1. Any tire is worn so that less than 2/32-inch tread remains in any two major grooves.
2. Any tire has a worn spot that exposes the cord through the tread.
3. Any tire has visible bumps, bulges, or knots indicating failure or separation of the tire structure.
4. Any tire has cuts, snags, or severe ozone or weather cracks in any location.
5. Tires on the same axle are not the same type, construction, or size.
6. Any tire is marked "For Farm Use Only," "Off-Highway Use Only," "Racing use Only," etc.

Advise customer if:

1. Tire tread depths are between 2/32 and 4/32 of an inch, as they are likely to diminish to below safety standards before the term of the safety inspection expires.
2. Tire size does not match manufacturer specifications.
3. The tire is more than 8 years old. In this case, recommend replacement.

Note: Refer to the [National Highway Traffic Safety Administration \(NHTSA\)](#) for tire manufacturers' recommend tire age for replacement.

Procedure: Examine wheels. Refer to [49 CFR § 570.10](#) for additional information.

Reject vehicle if:

1. Any part of wheel is bent, cracked, rewelded, damaged, or has elongated bolt holes so as to affect safe operation of the vehicle.

Advise customer if:

1. The lateral and radial runout of any rim bead area exceeds one-eighth of an inch of total indicated runout.

Procedure: Examine wheel components.

Reject vehicle if:

1. Wheel bolts, nuts, studs, or lugs are loose, missing, or cracked.

STEERING AND SUSPENSION

Procedure: Examine vehicle ball joints according to the manufacturer's recommended procedure. Refer to [49 CFR § 570.8](#) for additional information.

Reject vehicle if:

1. Ball joint movement exceeds the manufacturer's specifications.

Advise customer if:

1. Ball joint seals/boots are cut or cracked.

Procedure: Examine vehicle wheel bearings according to the manufacturer's recommended procedure.

Reject vehicle if:

1. The relative movement in wheel bearing exceeds the manufacturer's specifications.

Procedure: Examine vehicle heim joints and tie rod ends.

Reject vehicle if:

1. The amount of play in the heim joint or tie rod end exceeds the manufacturer's specifications.

Procedure: Examine vehicle control arms.

Reject vehicle if:

1. The control arm is rusted or damaged to the point that its integrity is compromised.

Procedure: Examine steering linkage and steering wheel lash. Refer to [49 CFR § 570.7](#) for more information.

Note: If, during the road test, the vehicle exhibits behavior that indicates a problem with alignment, check alignment and advise the customer if toe-in exceeds 1.5 times the value listed in the vehicle manufacturer's service specification for alignment setting.

Reject vehicle if:

1. Steering linkage play exceeds the manufacturer's specifications.
2. Steering wheel lash exceeds the specifications outlined in Table 1, below.
3. Front wheels are incapable of being turned to the right and left steering stops without binding or interference.

Table 1 – Steering System Free Play Values

Steering wheel diameter (inches)	Lash (inches)
16 or less	2
18	2 ¼
20	2 ½
22	2 ¾

Advise customer if:

1. Free play in the steering linkage exceeds 1/4 of an inch.

Procedure: Examine CV joints and U-joints.

Reject vehicle if:

1. CV joints or U-joints are loose or binding in a way that affects steering performance.

Advise customer if:

1. The CV boot is torn.

Procedure: Examine power steering components.

Reject vehicle if:

1. Any power steering system component exhibits excessive fluid leak (actively dripping from the vehicle).
2. Any electric and/or hydraulic power steering system component fails to function as designed (not including power steering belt).

Procedure: Examine power steering belt.

Reject vehicle if:

1. Power steering belt is broken.

Advise customer if:

1. Power steering belt exhibits dry rot and/or cracks.

Procedure: Examine springs, torsion bars, shock absorbers, and struts.

Reject vehicle if:

1. Springs or torsion bars are cracked, broken, missing, or shifted out of position.
2. Vehicle continues free rocking motion after release, indicating loss of shock absorber function.
3. Shock absorbers or struts are missing or display excessive leakage (e.g., actively dripping from the vehicle).
4. Mounting bolts or mounts for torsion bars, springs, or shock absorbers/struts are loose or broken.
5. Air springs are collapsed.
6. Shackles or U-bolts are worn or loose.
7. Radius rods are missing or damaged.
8. Stabilizer bar is broken, disconnected or missing (if originally equipped).

Advise customer if:

1. Rubber bushings are cracked or extruded out from or missing from suspension joints.
2. Spacers, if installed, are not on both front springs, not on both rear springs, or not on all four springs.

BRAKE SYSTEMS

The vehicle is required to be road tested either on a public highway, as defined by [23 V.S.A. § 4 \(13\)](#), or in the station yard. The area of the station yard used to conduct the road test must be approved by the DMV. This area must be owned by the station, and access must be closed to the general flow of public traffic.

At a minimum, mechanics are REQUIRED to remove one wheel to completely inspect brake components. If during the road test or physical brake examination, the Inspection Mechanic detects or suspects a problem with one or more of the brakes, all four wheels must be removed to examine the braking systems. Refer to [49 CFR § 570.5](#) for additional information.

Procedure: Examine braking performance during road test.

1. At a speed of 20 MPH, apply the service brake firmly.
2. Verify that the vehicle comes to a smooth stop within 25 feet without pulling to the right or left.
3. The driver should have firm control of the steering wheel throughout the test.

Mechanic Advisory: Federal Motor Vehicle Safety Standards (FMVSS) state that the road test must be conducted on a level (not to exceed plus or minus 1 percent grade), dry, smooth, hard-surfaced road that is free from loose material, oil, or grease. [Title 49 CFR 570](#).

Note: Consider Vermont's seasonal inclement weather conditions and conduct road tests in conditions that ensure that an examination can be conducted appropriately.

Reject vehicle if:

1. The vehicle requires more than 25 feet to stop from 20 MPH.
2. Within the 25-foot braking test, the vehicle swerves enough for any wheel to leave the 12-foot lane.
3. Under 150 pounds of pressure, the brake warning light illuminates or if the brake pedal falls away under pressure or contacts some object that prohibits brake pedal travel.

Advise customer if:

1. When the brake pedal is fully depressed, the distance that the pedal has traveled from its free position is greater than 80 percent of the total distance from its free position to the floorboard or other object that restricts pedal travel.

Procedure: Examine master cylinder.

Reject vehicle if:

1. Master cylinder leaks.
2. The master cylinder fluid level is below the minimum level.

Procedure: Examine brake components.

Reject vehicle if:

1. Hoses or tubing leak or are cracked, chafed, flattened, restricted, insecurely fastened, rusted, and/or corroded, resulting in flaking or pitting that alters the original diameter of the brake line.

2. If repairs have been made with copper tubing or compression fittings.
3. Brake hoses are mounted so as to contact the vehicle body or chassis.
4. Vacuum hoses are collapsed, abraded, broken, improperly mounted, or audibly leaking.

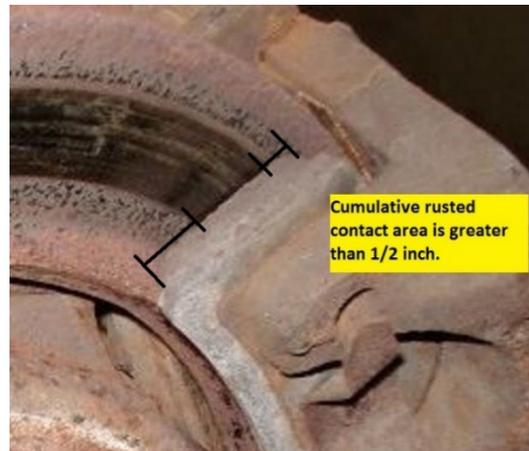
Advise customer if:

1. With residual vacuum exhausted and a constant 25-pound force on the brake pedal, the pedal should fall slightly when the engine is started, demonstrating integrity of the power-assist system. This test is not applicable to vehicles equipped with full power brake system because the service brake performance test will be considered an adequate test of system performance.

Procedure: Examine rotors/drums.

Reject vehicle if:

1. Brake rotor thickness is less than the manufacturer's minimum specification.
2. The drum inside diameter exceeds the manufacturer's maximum specification.
3. Brake rotor cooling vanes on vented rotors are corroded or rusted to the point where the rotor collapses when pressure is applied by the brake caliper.
4. If more than 1/2 inch of rust (cumulative per braking surface) exists on any contact surface of the rotor/drum.



Note: Rust is defined as a condition of any swelling, delamination, or pitting.

5. System components are cracked, broken, misaligned, missing, or binding or if automatic adjusters or other parts are assembled or installed incorrectly.
6. Evidence of cracks exist on the rotor/drum.
7. Brake lining does not meet manufacturer's minimum thickness specification.
8. Brake lining shows evidence of cracks or chips or if adhesion to the backing plate is compromised.
9. Wheel cylinders or calipers leak.

Advise customer if:

1. Any buildup of rust is present on the contact surface of the rotor/drum.

Procedure: Examine parking brake function.

Reject vehicle if:

1. A manual transmission vehicle’s parking brake does not properly function.

Advise customer if:

1. An automatic transmission vehicle’s parking brake does not properly function.

LIGHTING AND ELECTRICAL SYSTEMS

Required minimum lighting includes:

Headlamps: high and low beam 23 V.S.A. § 1244	2	White	Front	On the front at the same height, with an equal number on each side of the vertical centerline, as far apart as practical.
Turn signal lamps (front) 23 V.S.A. § 1249	2	Amber	Front	One on each side of the vertical centerline at the same height and as far apart as practical.
Parking lamps	2	Amber	Front	One on each side of the vertical centerline at the same height and as far apart as practical.
Hazard-warning lamps (front)	2	Amber	Front	One lamp on each side of the vertical centerline and as far apart as practical.
Tail lamps 23 V.S.A. § 1248	2	Red	Rear	One lamp on each side of the vertical centerline at the same height and as far apart as practical.
Stop lamps	2	Red	Rear	One lamp on each side of the vertical centerline at the same height and as far apart as practical, activated by the brake system.
Center high-mount stop lamp	1	Red	Rear	One lamp on the vertical centerline, as high as practical, activated by the brake system (required on cars manufactured in 1986 and newer, light trucks under 10,000 pounds GVWR manufactured in 1994 and newer).
Turn signal lamps (rear) 23 V.S.A. § 1249	2	Amber or red	Rear	One lamp on each side of the vertical centerline and as far apart as practical.
Hazard-warning lamps (rear)	2	Amber or red	Rear	One lamp on each side of the vertical centerline and as far apart as practical.

License plate lamp 23 V.S.A. § 1248	1	White	Rear	At rear license plate to illuminate the plate from the top or sides.
Backup lamps	2	White	Rear	Activated only when the vehicle is in reverse.
Clearance lamps (front) 23 V.S.A. § 1250	1	Amber	Front	Vehicles wider than 80 inches are required to be equipped with front clearance lamps as close as possible to the extreme height and width of the vehicle.
Clearance lamps (rear) 23 V.S.A. § 1250	1	Red	Rear	Vehicles wider than 80 inches are required to be equipped with rear clearance lamps as close as possible to the extreme height and width of the vehicle.

Procedure: Visually examine required exterior lamp functions and presence of required exterior lenses and reflectors.

Reject vehicle if:

1. Any required lamps do not operate as designed.
2. Headlamps cannot be properly aimed.
3. Lamps are not DOT/SAE approved with appropriate markings.
4. A lamp shows color contrary to the chart above.
5. A lamp assembly is improperly fastened or loose.
6. Auxiliary equipment is placed on or in front of any lamp (except transparent covers that are part of the original manufacturer's equipped headlamps and are marked DOT approved, i.e., aftermarket tinted lamp covers).
7. A truck cap covers the originally installed center high-mount stop lamp and is not equipped with a center high-mount stop lamp at the rear of the cap (not required for vehicles with a GVWR of more than 10,000 pounds).
8. A lamp or lens has damage that causes pooling water on the interior of the assembly, excluding condensation.
9. A colored lamp or lens is missing or broken, allowing white light to show.
10. If the vehicle is equipped with LED lamps, more than 50 percent of any one lamp is inoperable.

Procedure: Examine all other lamps attached to vehicle.

Note: All other nonrequired lamps that do not operate as designed are no longer fail criteria.

Advise customer if:

1. Any additional lighting is not functioning as designed or may be contrary to law (Code of Federal Regulations [49 CFR § 571.108](#), [23 V.S.A. § 1246](#) and [23 V.S.A. § 1247](#)).

ADVERTISING SIGNS:

Reject vehicle if:

1. If a lighted advertising sign emits blue or red light to the front or rear. e.g., taxi, food delivery
2. Any color light emitted is so bright that it interferes with the vision of another vehicle operator approaching or following.

Note: Any vehicle displaying red or blue lights is required to have a permit under [23 V.S.A. § 1253](#). If a permit is not present, this is a fail criteria.

HEADLAMP AIMING

All equipment for testing headlamps must comply with the Society of Automotive Engineers Recommended Practice for Headlamps Inspection Equipment. When examining headlamps for illumination in accordance with [23 V.S.A. § 1246](#), if beams appear to be out of alignment, headlamp aim must be checked using one of the following methods.

1. **Photoelectric Testing Machine:** An approved photoelectric testing machine that will give essentially equivalent results.
2. **Headlamp-Testing Machine:** If a headlamp-testing machine is used, it must give results equivalent to those obtained using the screen procedure shown below. It must be in good repair and adjustment and must be used in accordance with the manufacturer's instructions. The machine using a photoelectric cell or cells to determine aim should also have a screen upon which the beam pattern is projected proportional to its appearance and aim on a screen at 25 feet. This screen must be plainly visible to the operator and should have horizontal and vertical reference lines to permit a visual appraisal of the lamp beam.
3. **Headlamp Aiming by the Screen Method:** Use according to the manufacturer's instructions.
4. **Aiming Area Required:** It is desirable to have a specific aiming area in a darkened location. This area should be sufficient for the vehicle and an additional 25 feet, measured from the face of the lamps to the front of the screen.

The floor on which the car rests must be flat and level with the bottom of the screen. If the floor is not level, compensate.

BEFORE HEADLAMP AIMING

Procedure:

1. Remove excessive ice and mud from under fenders, bumpers, etc.
2. Inflate tires to specified pressures.
3. See that the vehicle contains no load other than the driver in his or her normal position.
4. Be sure lenses are clean and check for burned out bulbs and proper beam switching. Replace headlamps with cracked or broken aiming pads.
5. Check the suspension. See that the vehicle does not lean to one side or the other. Rock the vehicle sideways to free and equalize the suspension.

Procedure: Examine instrument cluster warning lamp(s), speedometer/odometer, defroster, and horn functionality.

Reject vehicle if:

1. The anti-lock braking system (ABS) failure indicator light or warning light does not illuminate.
2. The brake system failure indicator light or warning light remains illuminated after the engine is started and the parking brake is released.
3. The brake and/or antilock warning light remains on.
4. The airbag indicator fails to light or continuously flashes or illuminates.

Note: A vehicle used as a mail carrier under a contract with the U.S. Postal Service is not to fail inspection solely because, in its conversion to a right-hand drive vehicle, the right air bag in the front compartment has been disconnected or a non-factory disconnect switch has been installed to disable the airbag. See [23 V.S.A. § 1222\(e\)](#).

5. The horn fails to function on the steering wheel as designed.
6. The speedometer and/or odometer is not operational, not legible, or is obstructed from the vehicle operator's view.
7. The speedometer does not illuminate.
8. The front defroster fails to function.

Advise customer if:

1. The tire pressure monitoring system (TPMS) low-pressure air-warning light/indicator is activated and may be malfunctioning. The inspection mechanic must recommend repair.
2. The rear defroster fails to function.

Procedure: Verify the park neutral safety switch and/or clutch safety switch function.

Reject vehicle if:

1. With automatic transmission, the starter operates with the gear selector in any gear other than “P” or “N.”
2. With manual transmission, the starter operates without depressing the clutch pedal (unless originally equipped, e.g., '66 Mustang).

Procedure: During the road test, note any advanced driver assistance systems (ADAS), if equipped, not operating as designed and/or if any warning indicator lamps are illuminated.

Reject vehicle if:

1. It is a 100 percent self-driving vehicle with ADAS that fails to operate as designed.

Advise customer if:

1. One or more of the following fail to function as designed on non-self-driving vehicles:

Backup camera system or backup alarm

Adaptive cruise control (ACC)

Adaptive headlights

Adaptive light control

Automatic parking

Blind-spot monitors

Pedestrian monitors

Proximity monitors

Driver drowsiness detection

Collision avoidance system

Forward collision warning

VEHICLE GLASS

Automotive safety glazing is marked with the manufacturer's trademark and the letters "AS," followed by a number between 1 and 11. Only AS1 (or AS10 Bullet Resistant) may be used in the windshield. Safety glazing for 1966 and later models also has a glass manufacturer's model number or a DOT code number. [23 V.S.A. § 1242](#).

A person is prohibited from operating a Vermont-registered motor vehicle manufactured or assembled after January 1, 1936, on a highway in this state unless the vehicle is equipped with safety glass wherever glass is used in doors, windows, and windshields.

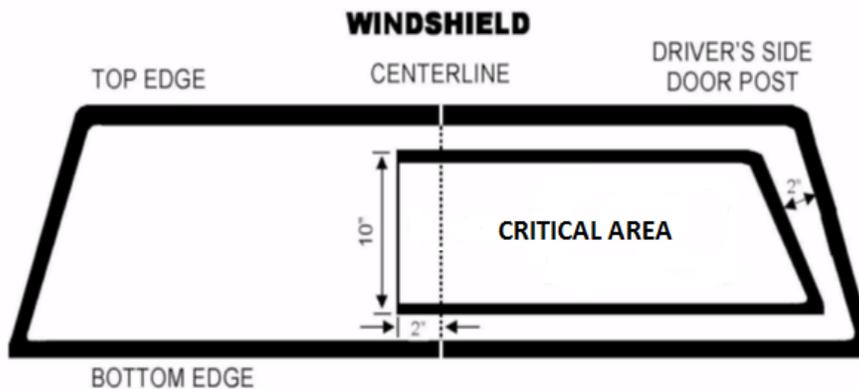
Procedure: Examine windshield.

Reject vehicle if:

1. Any nontransparent matter is present on any transparent part of the motor vehicle's windshield, except in a space not more than 4 inches high and 12 inches long in the lower right corner of the windshield, in such a location of any sticker required by governmental regulation, or in a space not more than 2 inches high and 2 1/2 inches long in the upper left corner of the windshield.
2. There is an aftermarket tint applied to the windshield.
3. The windshield is missing or does not conform to safety glass requirements.
4. Any crack is intersected by another crack in the critical area.
5. There are two or more star breaks or bullseyes larger than 1.5 inches within any part of the critical area.

Advise customer if:

1. There is any damage outside of the critical area.



CRITICAL AREA:

The critical area starts 2 inches in from the left front post and extends 2 inches past the center of the windshield.

The critical area is centered between the top and bottom of the windshield and is 10 inches in height.

Procedure: Examine side windows to the left and right of the driver.

Reject vehicle if:

1. Any nontransparent matter is present on any transparent part of the vent windows or side windows located immediately to the left and right of the driver.
2. Any manual or power-operated window fails to operate properly.
3. The vent/side windows do not conform to safety-glass requirements.

Advise customer if:

1. Windows to the driver's left and right contain aftermarket tint. These windows may be in violation of State Law [23 V.S.A. § 1125](#).

Procedure: Examine side windows to the rear of driver.

Reject vehicle if:

1. Any manual or power-operated window fails to operate properly.
2. The rear side windows do not conform to safety-glass requirements.

Procedure: Examine back window.

Reject vehicle if:

1. The back window does not comply with the safety standard of the manufacturer's specifications.

ADDITIONAL GLAZING INFORMATION

Glazing Material Position Markings:

The letters **AS** and the numerical markings that should be found on glazing materials. These numbers come from American National Standards Institute (ANSI) Glazing Standard Z26.1 and in accordance to [49 C.F.R. § 571.205](#).

Position Number	Description
1	Safety Glazing Material for use anywhere in motor vehicle.
2	Safety Glazing Material for use anywhere in motor vehicle except windshields.
3	Safety Glazing Material for use in a motor vehicle except windshields and certain specified locations.
4	Safety Glazing Material for use in motor vehicles only in the following locations.
5	Safety Glazing Materials for use in motor vehicles only in the following specific locations at levels not requisite for driving visibility.
6	Safety Glazing Materials for use only in house or property carrying trailers, in the rear windows of convertible passenger car tops, in windscreens for motorcycles, in flexible curtains or readily removable windows, or in ventilators used in conjunction with readily removable windows.
7	Safety Glazing Materials for use in house or property carrying trailers and at levels not requisite for driving visibility in the rear window of convertible passenger car tops, in windscreens for motorcycles, in flexible curtains or readily removable windows, or in ventilators used in conjunction with readily removable windows.
10	Bullet Resistant Glass for use anywhere in motor vehicle.
11	Bullet Resistant Glass for use anywhere in motor vehicles except windshields.

VEHICLE INTERIOR

Procedure: Examine interior vehicle components to include: interior rearview mirror, sun visor, seats, and safety belts.

Reject vehicle if:

1. Interior mirror is missing, cracked, loose, broken, has sharp edges, or cannot be cleaned, obscuring rear vision.

Note: This does not apply to vehicles with manufactured restricted rear vision (e.g., utility vans, dump bodies, etc.). In these cases, two side mirrors are required.

2. Any driver’s seat adjusting mechanism slips out of position or fails to move forward and backward.

3. Manual seat belt webbing is frayed, split, worn, or cut.
4. Manual seat belt buckles do not operate properly.
5. Any seat belt anchor or bolt is loose, missing, or not fastened to the belt.
6. A motorized seat belt does not move and secure in locked position properly.
7. An airbag on/off switch that was not original equipment exists, and the owner cannot produce a federal exemption.
8. The seat belt connection indicator lamp continues to flash or remains illuminated when the seat belt is fastened.

Advise customer if:

1. The driver's sun visor is missing.

EXTERIOR BODY AND SHEET METAL

Procedure: Examine exterior vehicle components, including mirrors, wipers, washer systems, sheet metal/body, bumpers, flaps, fenders, floor pan, truck caps, and bed liners.

Mirrors, [23 V.S.A. § 1305](#)

Reject vehicle if:

1. An exterior rearview mirror is loose enough to prevent clear vision to the rear of the vehicle.
2. An exterior rearview mirror is cracked, pitted, broken, or clouded enough to obscure rear vision.
3. An exterior mirror is missing or cannot be adjusted.

Note: All vehicles manufactured after January 1, 1968, were equipped at the factory with a left exterior rearview mirror.

Windshield Wipers/washer

Reject vehicle if:

1. Front windshield wipers are not operational.
2. Vehicles produced after January 1, 1969, do not have two or more windshield wiper speed settings.

3. Portions of blades that contact the windshield are ripped or are missing sections of the rubber.
4. The windshield washer system is not capable of cleaning the critical area of the windshield.

Advise customer if:

1. The rear window wiper does not function.
2. Blades smear or severely streak the windshield after five cycles.
3. Headlight wipers or washers do not function.

Sheet Metal/Body

Reject vehicle if:

1. There is torn metal or corrosion which breaks the integrity of the sheet metal by passing through ANY nonstructural area of the vehicle that is not covered to ensure they are not a hazard.
2. Any hole is present that would allow gas fumes to enter the interior of the vehicle.
3. Loose or dislocated parts protrude from the surface of the vehicle that cannot be repaired or removed.
4. Sharp or jagged edges protrude from the bumper cover that cannot be repaired or removed.
5. The difference in height between the body floor and the top of the frame exceeds 4 inches.

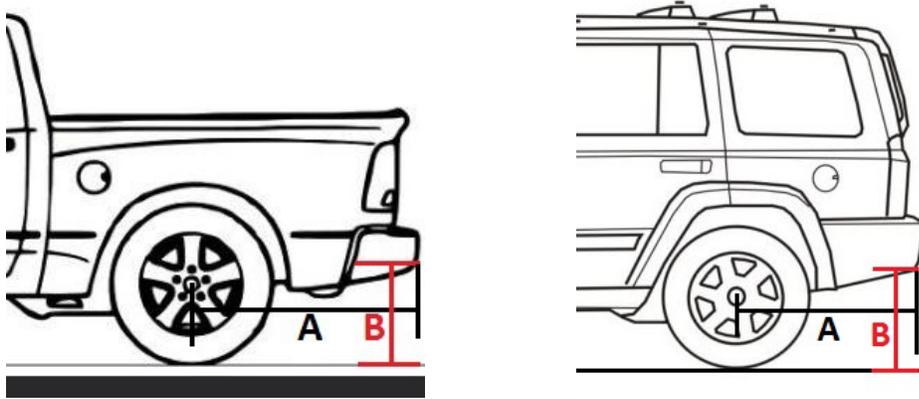
Advise customer if:

1. There is torn metal or any perforation present on ANY nonstructural area of the vehicle. The mechanic should recommend the customer have the item repaired or replaced.

Note: Metal tape may be used to repair torn metal or perforation smaller than two (2) inches in diameter located on any nonstructural area of the vehicle.

Flaps, [23 V.S.A. § 1306](#)

Flaps are required if B is greater than 1/2 of A.



If flaps are required, the standard below must be followed:

Flaps must extend laterally for at least the width of the tires, and their length must result in a clearance from the ground to the bottom edge of the flap exceeding 6 inches but less than 16 inches, when empty.

Reject vehicle if:

1. Flaps are required but are not present or do not meet the standard described above.

Fenders

Reject vehicle if:

1. Any fender has been removed.
2. A fender fails to cover the tread portion of a tire.
3. A rear fender and/or fender well is rusted or damaged enough that it allows exhaust gas to enter the passenger compartment.

Doors

Reject vehicle if:

1. Doors or door parts are missing, broken, or sagging and prevent the door from being tightly closed or opened from both the inside and the outside.

Bumper

Reject vehicle if:

1. A bumper is loosely attached, or a broken or torn portion protrudes.
2. Any bumper mount, beam, or bar is corroded to the extent that it displays cracks or holes or shows indications of previous impact damage.
3. Exterior covers of the front and rear bumpers are not securely fastened or display any damaged condition of its skin protruding from the exterior surface.
4. The bumper is not of a type installed by the manufacturer or is an aftermarket replacement that does not have material to absorb a reasonable impact.
5. The maximum bumper height does not meet the standard below:

VEHICLE CLASS	HEIGHT	
	Front Bumper	Rear Bumper
Pleasure Cars	22 inches	22 inches
Trucks and MPVs:		
4,500 pounds and under (GVWR)	24 inches	26 inches
4,501–7,500 pounds (GVWR)	27 inches	29 inches
7,501–10,000 pounds (GVWR)	28 inches	30 inches
Four-wheel-drive and dual-wheel trucks	28 inches	31 inches

Note: "Bumper height" is the vertical distance between the ground and the highest point of the bottom of the bumper, measured on a level surface, with the vehicle's tires inflated to the manufacturer's recommended pressure. For any vehicle with bumpers or attaching components that have been modified or altered from the original manufacturer's design to conform with the maximum bumper height of this section, the bumper height must be measured from a level surface to the bottom of the vehicle frame rail at the most forward and rearward points of the frame rail. [49 CFR Part 581](#).

Hood

Reject vehicle if:

1. The hood latch does not securely hold the hood in its proper fully closed position.
2. The secondary or safety hood catch does not function properly.

3. The hood latch release mechanism or its parts are broken, missing, or badly adjusted, so the hood cannot be opened and closed properly.

Note: If the vehicle is equipped with an aftermarket hood that can't use the existing manufacturer's hood release mechanisms, pins can be substituted as long as they are properly mounted to the radiator support.

Floor Pan

Reject vehicle if:

1. The floor pan has any cracks or any hole that may permit exhaust fumes to enter the interior of the vehicle or if the floor pan is rusted to the point that there are sagging areas.

Truck Caps and Bed Liners

Reject vehicle if:

1. The cap or bed liner is not securely attached.

FRAME/UNIBODY – STRUCTURAL COMPONENTS

Procedure: Examine the undercarriage of the vehicle's frame and/or unibody, rocker panels, cross members, body mounts, engine mounts, and engine cradle.

Rocker Panel

Reject vehicle if:

1. Any area of a rocker panel displays corrosion, damage or cracks which breaks down the integrity of the metal by passing through the inner or outer rocker panel. **Items such as duct tape, foam spray insulation, or other materials are not acceptable.**

Advise customer if:

1. Any area of the rocker panel is deformed, kinked, bent, or is displaying moderate to severe corrosion. The mechanic should recommend the customer have the rocker panel repaired or replaced.

Frame Components

Reject vehicle if:

1. Any area of the frame or cross members connecting the left side of the frame to the right side of the frame, cross members connecting to the inner rocker panels, engine mounts, or engine cradles exhibit corrosion which breaks the integrity of the metal by passing through a component, or causes cracks, causes breaks, causes tears, or any broken manufactured welds or is missing any section of an original manufactured component. **Items such as duct tape, foam spray insulation, or other materials are not acceptable.**

Note: No patches, welds, or repairs of any kind to any portion of the above-described frame and unibody areas are acceptable, unless the repair meets manufacturer recommendations, specifications or requirements.

Advise customer if:

1. Any area of the frame component is deformed, kinked, bent, or is displaying moderate to severe corrosion. The mechanic should recommend the customer have the component repaired or replaced.

EXHAUST SYSTEM

Procedure: Examine vehicle exhaust system and components, including piping leading from the cylinder head to the exhaust end of the tailpipe.

Reject vehicle if:

1. The vehicle has no muffler.
2. There are nonmanufactured holes or leaks in the exhaust system from cylinder head to the tailpipe.

Note: Repairs with equal or greater material than that commonly used in the manufacturing of exhaust systems are permitted.

3. Components of the system are not securely fastened.
4. Any heat shield connected to the body (floor pan) is missing.
5. Any component of the system passes through the passenger compartment.
6. The exhaust system does not discharge exhaust fumes beyond the passenger compartment of the vehicle.

Advise customer if:

1. The tailpipe end is pinched, plugged, or crushed, which would restrict the exhaust flow.
2. If any heat shield connected to the exhaust system (not to the body/floor pan) is missing.
3. There is a muffler, muffler cutout, or similar device that allows excessive noise.

FUEL SYSTEM

Procedure: Examine the vehicle fuel tank, fuel tank support straps, filler tube (rubber, plastic, metal) tube clamps, fuel tank vent holes or tubes, filler housing drain, overflow tubes, vapor recovery system components, and filler cap.

Reject vehicle if:

1. Any part of the system is not securely fastened.
2. There is vapor or liquid fuel leakage caused by deterioration at any point in the system.
3. The fuel tank filler cap is missing (if originally equipped).
4. The fuel tank is an auxiliary or added tank or if the primary tank has been removed or is not operational.
5. Fuel hoses or tubes are contacting moving components.

EMISSION CONTROLS

CATALYTIC CONVERTER

Procedure: If originally equipped with a catalytic converter(s), visually examine for the presence of a properly installed catalytic converter(s) while vehicle is on a lift.

Special consideration should be given to the following:

1. Many resonators or mufflers look like catalytic converters. Consult the manufacturer's specification, if necessary, for the catalytic converter location.
2. Look beyond the converter heat shield to verify the converter itself is present.
3. On some vehicles, the converter is located close to the engine. It may be necessary to raise the hood to verify the converter's presence.

4. Some engines have two converters, one on each pipe of the manifold “Y” pipe, while others have only one converter. Consult the manufacturer’s specifications for design details.
5. Many “dual-bed” catalytic converters have an air injection tube installed between the beds. This tube must be present and connected for approval.

Reject vehicle if:

1. The catalytic converter is disconnected, removed, or shows signs of tampering.
2. The air supply to the converter is disconnected or removed, if applicable.

Note: To determine if a vehicle was originally equipped with a catalytic converter:

- a. Locate the vehicle emission control information (VECI) label under the hood. Vehicles built during 1966–1970 model years in conformity to U.S. standards may not have this label but can be easily identified by a Department of Transportation (DOT) doorpost label indicating conformity with federal safety standards. All 1971 and newer cars, light-duty trucks, or multipurpose vehicles are required to have this label placed in the engine compartment. The label should indicate “Catalyst” if the vehicle was originally equipped with a converter. If unable to locate the VECI label, consult the manufacturer.
- b. In some instances, especially in the cases of pickup trucks and vans, it may be necessary to verify the GVWR of the vehicle.

Note: The GVWR can be determined by opening the driver’s door and reading the label on the edge of the doorpost.

- c. If it cannot be determined whether the vehicle was originally equipped with a catalytic converter, contact the manufacturer or other appropriate information source for specifications.

FUEL CAP TEST**Procedure: Visual examination of the fuel cap, if originally equipped, is required.****Reject vehicle if:**

1. The fuel cap is missing or defective.

ON-BOARD DIAGNOSTICS (OBDII) TEST

Applicability:

Starting from the current calendar year, vehicles 16 model years old or less¹, having a GVWR of 8,500 pounds or less will be required to undergo an on-board diagnostic (OBDII) system inspection. For example: from January 1, 2020, through December 31, 2020, vehicles that are model year 2005 or newer will be required to undergo an on-board diagnostic (OBDII) system inspection.

Procedure: OBDII inspections must be performed using equipment and procedures, including all equipment software prompts, approved by the DMV in consultation with the Department of Environmental Conservation (DEC).

1. As prompted by the approved equipment, perform a visual check of the malfunction indicator lamp with the vehicle in the Key On/Engine Off status.
2. As prompted by the approved equipment, connect the data link cable to the vehicle's data link connector and follow the screen prompts to enable the equipment to retrieve OBDII data.
3. As prompted by the approved equipment, perform a visual check of the malfunction indicator lamp with the vehicle in the Key On/Engine Running status.
4. As prompted by the approved equipment, turn the ignition key off and disconnect the data link cable from the vehicle's data link connector.

Reject vehicle if:

1. The vehicle's OBDII data link connector is missing, has been tampered with, or is otherwise inoperable.
2. The vehicle's malfunction indicator light does not illuminate at all when the vehicle's ignition is in Key On/Engine Off.
3. The vehicle's malfunction indicator light is illuminated while the vehicle's engine is running.
4. The vehicle's malfunction indicator light is commanded by the OBDII system to be illuminated.
5. An insufficient number of readiness codes are set, as determined by the DMV in consultation with the DEC.

Note: If performing a pre-approved paper-based test, it is the inspector's responsibility to ensure the most recent criteria regarding the allowed number of readiness monitors is used. Current guidelines can be determined by calling the technical support hotline or visiting the AVIP portal.

¹ For purposes of determining which model year vehicles are subject to testing, vehicles with the same model year as the current calendar year will be considered one model year old.

SPECIAL MOTOR VEHICLES

SPECIAL MOTOR VEHICLES

INSPECTION OF SPECIAL VEHICLES

Antique vehicles, kit cars, and replicas must be inspected as prescribed in the [Pleasure Car/Truck Section](#). Street rods, neighborhood electric vehicles, homebuilt vehicles, and exhibition vehicles must be inspected according to the procedures below.

MINIMUM REQUIREMENTS FOR CONSTRUCTION AND EQUIPMENT OF SPECIAL MOTOR VEHICLES:

Of passenger vehicles and trucks with an unladen weight of 10,000 pounds or less equipped with two or more axles having at least two wheels per axle, the term “special motor vehicles” includes the following types:

1. **Antique:** Exhibition vehicles to which “Antique Car” number plates are to be issued must be 25 years old or older to qualify. [23 V.S.A. § 373](#), DMV Rules.
2. **Exhibition:** These vehicles are generally very unique. Homebuilt vehicles registered as exhibition vehicles are exempt from OBDII.
3. **Homebuilt Vehicles:** All homebuilt vehicles registered as a pleasure car or truck must meet all the requirements of the inspection manual, including OBDII.
4. **Kit Car:** These vehicles have a commercially manufactured body and/or body and frame that may resemble a regularly manufactured vehicle or are vehicles whose body may be of a unique design but is manufactured to fit on a commercially manufactured frame.
5. **Neighborhood Electric Vehicles (NEVs):** NEVs must conform to the minimum safety equipment requirements in the Federal Motor Vehicle Safety Standard No. 500, Low-Speed Vehicles (49 CFR. 571.500). NEVs must be equipped with the following:

Headlamps	Seat belt(s)	VIN
Parking/hand brake	Stop lamps	Windshield
Rearview mirror(s)	Tail lamps	
Reflex reflectors	Turn signals	

6. **Replica:** These vehicles are often equipped in the same manner and with the same components as the original duplicated vehicle and should be inspected using the same criteria as for the original vehicle.
7. **Street Rod:** These may be inspected using the criteria specified below only after having been certified as a street rod by a person authorized by the commissioner to make such determination. At the time of inspection, the owner or operator must present the certificate of verification properly executed.

Type I street rods are restored to their original body configuration and may contain changed steering, brake, power train, or suspension systems and may include “replicas of street rods,” “replicas,” or “kit cars.”

Type II street rods are changed from the recognized vehicle manufacturer's original body configuration but retain the general appearance, including changes to the body chassis or engine of the original vehicle. This type may also include changes and modifications to engine, chassis, brake system, power train, steering, and suspension systems and may include “replicas of street rods,” “replicas,” or “kit cars.”

Note: You may call the area investigator or the Inspections Unit in Montpelier to obtain the name and contact of the nearest authorized person to obtain certification as a street rod.

DEFROSTER AND DEFOGGING DEVICE

Every special vehicle manufactured in 1964 or later must be equipped with a device capable of defogging or defrosting the windshield.

DOOR LATCHES

Every special vehicle equipped with doors leading directly into a compartment that contains one or more seating accommodations must be equipped with mechanically activated door latches that firmly and automatically secure the door when pushed closed, and that allow each door to be opened from the inside using a convenient lever, handle, or other suitable device. **Note: No special vehicle should have electronically activated door latches installed after January 1, 2018.**

FLOOR PAN

Every special vehicle must be equipped with a floor pan under the entire passenger-carrying compartment. The floor pan must support the weight of the number of occupants the vehicle is designed to carry. The floor pan must be constructed to prevent the entry of exhaust fumes.

GLAZING

Refer to the glass guidelines in the [Pleasure Car and Light Truck section](#).

Note: The minimum vertical height of the unobstructed windshield glass must be 6 inches or greater, or as originally equipped by a recognized manufacturer.

SIDE AND REAR GLASS

These items are not required, but if they are present, they must comply with the provisions of current ANSI Z 26.1 Standard. (AS1, AS2, AS4, AS6, AS10 or AS11.) Glass to the rear of the driver may be Lexan or tempered glass in a street rod.

WINDOW TINTING

Refer to the glass guidelines in the [Pleasure Car and Light Truck section](#).

CRACKS, CHIPS, OR DISCOLORATION

Refer to the glass guidelines in the [Pleasure Car and Light Truck Section](#).

DRIVER VISIBILITY

The vehicle must have a windshield and side windows or openings that allow the driver a minimum outward horizontal vision capability of 90 degrees to each side of a vertical plane passing through the fore and aft centerline of the vehicle. This range of vision may be interrupted by window framing not exceeding 2 inches wide and windshield-door post support areas not exceeding 4 inches wide at each side location.

HOOD LATCHES

A front-opening hood should be equipped with primary and secondary latching systems to remain in a closed position.

INSTRUMENTATION AND CONTROLS

1. **Odometer:** Every special vehicle must be equipped with an operating odometer calibrated to indicate total miles driven.
2. **Speedometer:** Every special vehicle must be equipped with an operating speedometer.
3. **Steering Wheel:** Every special vehicle must be equipped with a circular steering wheel with an outside diameter of 13 inches or more.

REARVIEW MIRROR

Every special vehicle must be equipped with two rearview mirrors, each having substantial unit magnification. One must be mounted on the inside of the vehicle in such a position that it provides the driver a clear view to the rear. The other must be mounted on the outside of the vehicle on the driver's side in such a position that it provides the driver a clear view to the rear. When an inside mirror does not offer a clear view to the rear, a right-side outside mirror is required. The mirror mounting must allow horizontal and vertical mirror adjustment. Each mirror must have a minimum of 10 square inches of reflective surface or, if round, must be a minimum of 3 inches in diameter.

SEAT BELTS

Every special vehicle must be equipped with a safety belt system for each occupant. Any safety belt system must, at a minimum, be a Type 1 (lap belt) and must meet Federal Motor Vehicle Safety Standard 209. All safety belt systems must be securely anchored to the vehicle body.

WINDSHIELD WIPERS

Every special motor vehicle must be equipped with at least one windshield wiper with a blade at least 5 1/2 inches long, properly centered upon the driver's position, that effectively clears the windshield area directly in front of the driver. The operation of the windshield wiper(s) must be controlled by the driver from within the vehicle and must be manually, electrically, or vacuum operated.

ACCELERATOR CONTROL SYSTEM

Every special motor vehicle must be equipped with an accelerator control system that returns the engine throttle to an idle position when the driver removes the actuating force from the accelerator control.

BRAKES: SERVICE BRAKES

Every special motor vehicle must be equipped with hydraulic brakes acting on all wheels. The service brakes, upon application, must be capable of meeting all the requirements specified in the [Pleasure Car and Light Truck Section](#).

CHASSIS REQUIREMENTS

PARKING/HAND BRAKE

The parking/hand brake must meet all the requirements listed the [Pleasure Car and Light Truck Section](#).

BUMPERS

1. Every motor vehicle registered in this state and operated upon the public streets or highways must be equipped with front and rear bumpers if the vehicle was equipped with such bumpers as standard equipment. Bumpers are optional on street rods, as defined earlier in this section.
2. Bumpers must extend to the width of their respective wheel track distances. The horizontal bumper or customized bumper or grill bar structure must be at least 4 1/2 inches in vertical height, centered on the vehicle's centerline, and attached to the vehicle frame to effectively transfer impact when engaged.

EXHAUST SYSTEM

Every special motor vehicle must be equipped with an exhaust system free of leaks, including the exhaust manifolds (including headers), the piping leading from the flange of the exhaust manifold(s), the muffler(s), and the tail piping. Vehicles registered as exhibition vehicles are exempt from OBDII requirements.

Exhaust systems on property-carrying vehicles must discharge the exhaust fumes to the rear of the part of the vehicle designed for, and normally used for, carrying the driver and passengers. Side-exiting exhaust systems must be vented to the rear of all passenger compartment doors.

FENDERS

All wheels of every special motor vehicle must be equipped with fenders designed to cover the entire tire tread width that comes in contact with the road surface. Coverage of the tire tread circumference must be from at least 15 degrees in front to at least 75 degrees to the rear of the vertical center line at each wheel, measured from the center of wheel rotation. The tire must not at any time come in contact with the body, fender, or chassis of the vehicle. Fenders are optional on street rods for any model year before 1935.

FUEL SYSTEM

Every special motor vehicle must have all fuel system components, such as tank, tubing, hoses, clamps, etc., securely fastened to the vehicle with fasteners designed for this purpose so as not to interfere with the vehicle's operation, and the system must be leak proof.

Fuel lines must be positioned to avoid contact with high-temperature surfaces or moving components. The fuel tank must be vented to the outside of the vehicle and must have a sealed inlet (filler) pipe cap.

STEERING

A special motor vehicle must have no steering components extending below the wheel rims in their lowest position. The use of unconventional steering components, such as chain drive, sprockets, or electric solenoids, is prohibited. The steering system must remain unobstructed when turned from lock to lock.

While the vehicle is in a sharp turn at speeds between 5 MPH and 15 MPH, the release of the steering wheel must result in a distinct tendency for the vehicle to increase its turning radius. (Stability tests must be performed on a dry, level concrete or asphalt road having no loose surface contaminant, and the vehicle tires must be inflated to the recommended pressure, in accordance with the tire load, per Federal Motor Vehicle Safety Standard No. 109.)

SUSPENSION

Special vehicles must be equipped with an operational damping device at each wheel location.

SCRUB LINE

For all special vehicles, as defined earlier in this section, on both the front and rear suspension of the vehicle, stretch a taut string from the bottom of each wheel rim to the bottom of each of the other three tires at the road surface. If any part of the steering, suspension, or chassis is below this string, the vehicle will not pass inspection. Allow an additional 1/4 inch, assuming the tire will not come off the rim if the tire should go flat. Items that may extend below the scrub line include body sheet metal, bumpers, exhaust system components, and oil and transmission pans.

TIRES AND WHEELS

The tires on special motor vehicles must comply with current FMVSS and VESC-1 and VESC-7. Front tires on street rods must have a minimum of 5 inches of tread width in contact with the road

surface and must be of a type approved for use on pleasure cars or trucks. Tires must meet all other standards specified in Section 2 of the [Pleasure Car and Light Truck Section](#).

ELECTRICAL SYSTEMS REQUIREMENTS

DIMMER SWITCH

The headlamp circuit must be equipped with a driver-controlled switch used to select the high or low beam.

HEADLAMP SWITCH

The headlamp switch must activate the headlamps, tail lamps, license plate lamp, parking lamps, and the speedometer illumination lamp(s).

HEADLAMP SYSTEM

Every special motor vehicle must be equipped with headlamp units, as described in the [Pleasure Car and Light Truck Section](#). The headlamps must be mounted between 24 inches and 54 inches above the road surface when measured to the headlamp center. Lamp sub-bodies must be constructed with adequate adjustment to aim the headlamps.

HIGH BEAM INDICATOR

An indicator must be present to show the driver when the high beam of the headlamp system is energized. The indicator must emit a light other than white, plainly visible to the driver under normal driving conditions.

HORN

Every special vehicle shall be equipped with a horn that is electrically operated and that will emit a minimum sound level of ninety-two decibels (92 dB) measured at a distance of two hundred feet (200') directly in front of the vehicle under clear weather conditions. The switch used to actuate the horn shall be easily accessible to the driver when operating the vehicle.

LICENSE PLATE LAMP

At least one white lamp must illuminate the rear license plate.

PARKING LAMPS

Two amber or white parking lamps, in compliance with SAE J222, must be mounted on the front: one on each side, equidistant from the vertical centerline of the vehicle, at the same height, and as far apart as practical. The parking lamps must be mounted between 15 inches and 72 inches above the roadway.

STOP LAMPS

Two red stop lamps, in compliance with SAE Standard J586b, must be mounted on the rear: one on each side, equidistant from the vertical centerline of the vehicle, at the same height, and as far apart as practical.

Type I or Type II vehicles that were originally equipped with only one stop lamp need not be equipped with two stop lamps, provided that the original lamp is located in accordance with the original design configuration. The stop lamps must be mounted between 15 inches and 72 inches above the roadway. (Combination lighting devices are acceptable.)

TAIL LAMP SYSTEM

Two red lamps, in compliance with SAE Standard J585c, must be mounted on the rear: one on each side, equidistant from the vertical centerline, at the same height, and as far apart as practical. The tail lamps must be mounted between 15 inches and 72 inches above the roadway. Type I vehicles that were originally equipped with only one tail lamp need not be equipped with two tail lamps, provided that the original lamp is located in accordance with the original design configuration. (Combination lighting devices are acceptable.)

TURN SIGNAL INDICATOR

If the front signal lamp(s) are not readily visible to the driver, there must be an illuminated indicator that gives a clear and unmistakable indication that the turn signal system is turned on. The illuminated indicator must consist of one or more bright lights flashing at the same frequency as the signal lamps, and it must emit a light other than white. (Combination lighting devices are acceptable.)

TURN SIGNAL LAMPS

Two Class A red or amber turn signal lamps and two Class A amber turn signal lamps, in compliance with SAE J588d, must be mounted as follows: At or near the front, one amber lamp on each side, equidistant from the vertical centerline, at the same height, and as far apart as practical. On the rear, one red or amber lamp on each side, equidistant from the vertical centerline, at the same height, and as far apart as practical. All turn signal lamps must be mounted between 15 inches and 83 inches above the roadway. Type I vehicles that were originally equipped with only one tail lamp need not be equipped with two tail lamps, provided that the original lamp is located in accordance with the original design configuration. (Combination lighting devices are acceptable.)

TURN SIGNAL SWITCH

Every special vehicle must be equipped with a switch controlled by the operator of the vehicle that causes the turn signal lamps to function.

REPLACEMENT LENSES

On street rods, as defined earlier in this section, where an original lens cannot be found to replace a cracked or defective stop, tail, or rear lens, it is acceptable to replace the lens with a portion of a similarly approved lens cut and shaped to the appropriate size, so long as the original lens was of an approved type.

AUTOMATIC TRANSMISSION

For automatic transmission only, regarding the neutral safety starting switch, confirm that the starter operates with gear selector in “P” or “N” only. If the starter operates in any gear other than park or neutral, the vehicle cannot pass inspection.

ENGINE ENCLOSURE

Special vehicles must be equipped with an enclosure providing coverage for all pulleys, belts, and external moving engine parts. The cover must be made of rigid material and completely cover all moving parts. If a flat cover is used, it must extend at least 1 inch beyond all parts being covered. If the cover encases the moving parts, it need not extend the required 1 inch beyond all edges. Engines with pulleys, belts, and other moving parts encased need only enclose the air intake with rigid mesh material. The openings in the mesh must not exceed 1/4 inch.

If the hood is removed from a vehicle with a front-mounted engine, the fan must be enclosed within a shroud of substantial rigid material to prohibit anyone from inadvertently being injured and to prevent the fan from flying up from the engine compartment should it become loose.

FIREWALL

The vehicle must be equipped with a firewall constructed of a metal or comparable insulated fire-retarding-material protective barrier to separate the engine compartment from the passenger compartment, capable of withstanding forces normally encountered in collisions and designed to retard the spread of fire from the engine compartment into the passenger compartment.

**MOTORCYCLE,
MOTOR-DRIVEN
CYCLE &
AUTOCYCLE**

MOTORCYCLE/MOTOR-DRIVEN CYCLE/AUTOCYCLE

STEERING AND WHEEL ALIGNMENT

Procedure:

1. Steering and alignment items should be checked visually and adjusted according to the manufacturer's specification.
2. Check for condition, adjustment, wear, or broken and defective parts.
3. Check ball joints if so equipped.

Reject vehicle if:

1. The frame is bent.
2. Wheels are out of line.
3. Broken, loose, or worn components are present.
4. There is a loose, broken, defective, or out-of-adjustment steering head bearing.
5. Loose, bent, broken, or damaged handlebars are present.
6. Ball joints are present, and looseness or play exceeds the manufacturer's specification.

Advise customer if:

1. In normal riding position, handlebar grips must not be higher than 15 inches above the saddle, as defined in [23 V.S.A. § 1117](#).

SUSPENSION

Procedure: Examine the suspension system and check for defective, broken, worn or missing components.

Reject vehicle if:

1. The vehicle has broken, worn, missing, defective, disconnected, or malfunctioning shock absorbers.
2. Broken or sagging springs that affect the safe control of the motorcycle.

TIRES, WHEELS, AND RIMS

Tires, wheels, and rims should be checked by visual examination.

Procedure: Check for condition and mounting of wheels, condition, and adjustment of bearings, wear, play, and any broken parts.

Reject vehicle if:

1. There are loose, missing, cracked, or defective bolts, nuts, or lugs.
2. The vehicle has a bent, loose, cracked, or damaged wheel; defective rim or wheel flange; or missing, broken, bent, loose, or damaged spokes.
3. The wheel runout exceeds 3/16 inch.
4. Broken or out-of-adjustment wheel bearings are present.
5. Grease retainers are defective.
6. Wheels are out of balance.
7. A tire does not meet the visual and tread depth requirements set forth in these standards.

Procedure: Inspect for tire wear. Tread depth is the amount of tread design on the tire.

Note: Tire tread depth must be measured in any two major tread grooves.

Reject vehicle if:

1. There is a fabric break, cut, or weather crack in any direction on the outside of the tire or if it has been repaired temporarily through the use of a blow-out patch or boot.
2. Any bump, bulge, or knob indicates separation or partial failure of tire structure.
3. Any portion of the ply or cord structure is exposed.
4. A portion of the tread design is completely worn, provided such worn portion is of sufficient size to affect the traction and stopping ability of the tire.
5. A tire is worn so that less than 2/32 inch of tread remains.
6. A tire is not of a type designed for use on a motorcycle.

FUEL SYSTEM

Procedure: Examine fuel system, paying particular attention to connections, fittings, and linkage. Power setting control (throttle) must be of the twist-grip type located on the right handlebar and must be self-returning to the idle position.

Reject vehicle if:

1. There is fuel leakage at any point in the fuel system.
2. The fuel tank and piping are not securely installed.
3. The fuel tank is not vented.
4. The throttle is not aligned or binding or if the linkage is worn, bent, broken, corroded, or missing.
5. The power setting control (throttle) fails to return to low engine speed.

EXHAUST SYSTEM

Motorcycles, motor-driven cycles, and autocycles must be equipped with an exhaust system, where applicable, incorporating a muffler or other mechanical device for the purpose of reducing engine noise.

Procedure: Examine the complete exhaust system, paying particular attention to rusted and corroded parts and surfaces.

Reject vehicle if:

1. The muffler or exhaust pipe has breaks, open seams, or perforations. All joints must be tight, and the entire system must be firmly attached to the vehicle.
2. Any patch or repair jacket is used other than one welded securely and completely around the entire perimeter.
3. Any component is not securely fastened or is located, so it interferes with the operation of the motor-driven cycle.
4. Shielding is not present to prevent inadvertent bodily contact with any part of the exhaust system during normal operation.
5. Any muffler (or catalytic converter, if so equipped) is present that is not original factory installed equipment, not equivalent replacement equipment, or not designed for highway use.
6. The muffler does not have baffles or baffles have been removed.

7. Any changes, modifications, alterations, deletions, or adjustments have been made to the exhaust system that would cause any exhaust system to generate an unreasonable sound level.

Advise owner if:

1. The exhaust system has cutout or bypass in violation of [40 C.F.R. 205.166](#).

BRAKES

Every motorcycle/motor-driven cycle/autocycle must be equipped with at least one service brake, which may be operated by hand or foot.

Condition of Mechanical Components

Procedure: Visually inspect the condition of the mechanical components. Items to be checked specifically include:

- Worn pins
- Missing or defective cotter pins
- Broken or missing springs
- Worn rods, clevises or couplings
- Frozen, rusted, or inoperative connections
- Missing spring clips
- Brake linings, drums, and rotors
- Misaligned anchor pins

Reject vehicle if:

1. Mechanical parts are misaligned, badly worn, broken, or missing.
2. There is high friction in pedal arrangement or brake components.
3. Brake operating levers are improperly positioned or misaligned.
4. There is an angle greater than 90 degrees between the cam-operating lever and the actuating cable or rod.
5. Brake lining thickness is less than the manufacturer's minimum thickness.
6. Rotor thickness is less than the manufacturer's recommended minimum thickness.
7. Drum inside diameter exceeds the manufacturer's maximum tolerance.
8. More than 1/2 inch of rust (cumulative per braking surface) exists on the contact surface of the rotor/drum.

Note: Rust is defined as a condition of any swelling, delamination, or pitting.

9. The rotor is warped.
10. Evidence of cracks exist on the rotor/drum.

CONDITION OF HYDRAULIC SYSTEM

Procedure:

1. Visually inspect the hydraulic system. Specific items to be checked include:

- a. Wheel cylinders for leakage.
- b. Binding pistons.
- c. Hydraulic hoses and tubes for kinks; cracked, chafed, or flattened or restricted sections; and improper support.
- d. Master cylinder for leakage.

2. Check master cylinder rod for proper adjustment and test system for brake fluid leakage by applying moderate pressure to brake controls and maintaining this pressure for at least 1 minute. Check fluid level in master cylinder.

Reject vehicle if:

1. There are leaks in the master cylinder or wheel cylinders.
2. There are scraped hydraulic hoses. Hydraulic hoses, tubes, or connections are leaking, restricted, crimped, cracked, or broken. Connecting lines are not properly attached or supported to prevent damage or abrasion by contact with the frame, axle, other lines, or any part of the vehicle. Pressure hoses are not equal to manufacturer's original equipment.
3. The master cylinder rod is improperly adjusted.
4. The brake pedal has a tendency to move slowly toward applied position (indicating fluid leakage) while pressure is maintained on the pedal/lever for 1 minute.
5. The master cylinder fluid level is below minimum level.

ROAD TEST

Procedure:

1. At a speed of 20 MPH, apply the service brake firmly without lockup.

2. Verify that the vehicle comes to a smooth stop within 30 feet from 20 MPH.
3. The driver should have firm control of the handlebars throughout the test.

Mechanic Advisory: Federal Motor Vehicle Safety Standards (FMVSS) state that the road test must be conducted on a level (not to exceed plus or minus 1 percent grade) dry, smooth, hard-surfaced road that is free from loose material, oil, and grease, [Title 49 CFR 570](#).

Note: Consider Vermont's seasonal inclement weather conditions and conduct road tests in conditions that ensure that an examination can be conducted appropriately.

Reject vehicle if:

1. The vehicle fails to stop in the distance equal to or less than specified.
2. The foot and hand levers do not have at least one-third of their travel as reserve after brakes are fully applied.

Anti-lock Braking System (ABS)

Procedure: If ABS equipped, inspect the vehicle for properly operating ABS.

Reject vehicle if:

1. The ABS light fails to illuminate.

LIGHTING AND ELECTRICAL SYSTEMS

Required Minimum Lighting Specifications:

Note: Motor-driven cycles whose maximum attainable speed is 30 MPH or slower are not required to have turn signals.

Headlamps: High and Low Beam 23 VSA §1245	1 Required	White	Modulating Headlamp Is Permissible
Turn Signals – Front	2 Required	Amber	
Turn Signals – Rear	2 Required	Amber or Red	
Tail Lamps/Stop Lamps 23 VSA §1248	1 Required	Red	Flashing Brake Light Is Permissible
License Plate Lamp 23 VSA §1248	1 Required	White	

Note: Turn signals and reflectors showing to the front must be amber in color, and lamps showing to the rear must be red or amber in color.

Procedure: Inspect headlamps, tail lamps, turn signals, stop signals, parking lamps, and reflectors for condition and proper operation.

Reject vehicle if:

1. Lamps are not DOT/SAE approved with appropriate markings.
2. A headlamp does not function or does not operate as designed.
3. A headlamp does not illuminate a clear white light.
4. A headlamp lens is not clear.
5. The vehicle is not equipped with at least one tail lamp.
6. The tail lamp is not functional.
7. The tail lamp is not red in color.
8. The vehicle is not equipped with at least one stop signal (this may be combined with another rear lamp).

9. The stop signal is not functional or does not illuminate with the application of both hand/foot levers.
10. The stop signal is not extinguished when the turn signal lamp is functioning (if combined with the turn signal lamp).
11. The stop signal is not red.
12. The vehicle is not equipped with at least one license plate lamp.
13. The license plate lamp is not white.
14. The power source does not maintain lamps at the required brightness for all conditions of operation.
15. Any required lamp or lens is turned or inclined so that its light is not properly directed.
16. If equipped with LED lamps, more than 50 percent of any one lamp is **inoperable**.

Advise customer if:

1. Auxiliary or aftermarket license plate or undercarriage glow light(s) are placed on or under the vehicle, whether flashing or steady burning.
2. The rear plate is not visible under normal (night) conditions from 50 feet to the rear.
3. The dimmer switch is in an unnatural location.
4. The beam indicator, if installed, is not operational.
5. Any signal-operating unit canceling mechanism is not functioning properly.
6. Wiring is in poor condition, improperly installed or insulated, or located where it could incur damage.
7. Any connection is not secure or shows signs of excessive corrosion.

HEADLAMP TESTING

When examining headlamps for illumination, if beams appear to be out of alignment, headlamp aim must be checked using one of the following methods:

- Approved screen, placed 25 feet in front of the headlamp.
- Approved photoelectric testing machine that will give essentially equivalent results.

Procedure:

1. Check for the proper inflation of tires.
2. Rock the cycle to free and equalize the suspension.
3. Aim with a rider in the saddle.
4. Clean lenses, check for burned out and correct bulbs, and proper wiring and switches.
5. Check headlamp approval. A minimum of one lamp is required.

HEADLAMP ADJUSTMENT

Procedure: Adjust the headlamp until the hot spot on the high beam is aimed straight ahead and drops the following distance in 25 feet:

- Single- and double-filament lamps should have a 2-inch drop in 25 feet.
- All headlamps must show a clear white light. No colored headlamp lens is permitted.
- Beam indicators are required on all motor vehicles originally designed with a beam indicator as an integral part of the lighting system.

HORN

Procedure: Examine the horn for condition and operation.

Reject vehicle if:

1. The horn is not audible under normal conditions.

Advise owner if:

1. The horn is not securely fastened to the vehicle.

WINDSHIELD/WINDSCREEN

Windshields or windscreens are not required but, if installed, they must be free of cracks, discoloration, and scratches and must be mounted so that the driver's vision is not obstructed.

Advise Customer if:

1. There are any cracks, discoloration, or scratches that obstruct or obscure the driver's vision.

BODY ITEMS

Procedure: Check for required body items, defective or discolored parts, and parts projecting from the vehicle.

Reject vehicle if:

1. Seats designed to carry more than one person are not equipped with footrests for passengers.
2. The engine mounting frame or brackets are cracked or broken.
3. Fenders and mudguards are broken, missing, or of insufficient design. Front and rear fenders must be equivalent to the manufacturer's original specifications.
4. Handlebars are not equipped with handgrips designed to ensure a firm, nonslip grip for the operator's hands.
5. Footrests for the driver are not securely mounted, are of insufficient design, or are in an improper location.
6. The seat is improperly or insecurely attached.
7. The sidecar, if present, is improperly attached or does not comply with lighting and tire requirements.
8. The clutch is not aligned or is binding, or the linkage is worn, corroded, broken, or missing.
9. Chain and belt guards are not sufficient to prevent bodily contact or snagging of clothing.
10. The vehicle stand fails to fold rearward and upward if it contacts the ground when the vehicle is moving forward, or it fails to fully retract.

Advise owner if:

1. The rear number plate bracket is not securely fastened.
2. The rear number plate is obscured.

3. The sidecar does not display an approved white or amber light mounted on the right side, showing to the front.

SPEEDOMETER AND ODOMETER

Procedure: Examine speedometer/odometer.

All motorcycles must be equipped with an operable speedometer and odometer. The dial and calibrations on the speedometer must be legible and unobstructed from the view of the operator of the motorcycle.

Reject vehicle if:

1. The speedometer and/or odometer is not operational.

REARVIEW MIRROR

Note: The rearview mirror must permit a clear view to the rear of the vehicle.

Procedure: Examine for security of mounting, visibility, and condition of mirror.

Reject vehicle if:

1. The rearview mirror(s) are missing.

Advise owner if:

1. Mirrors are cracked or discolored.
2. Mirrors are improperly installed.

AUTOCYCLE

If an autocycle is equipped or designed with components similar in design to a passenger vehicle, those components must be inspected as if the autocycle were a passenger vehicle.

These components include (but are not limited to) the following:

- Body components
- Floor pan
- Interior rearview mirror
- Seat belts
- Seats
- Steering and suspension
- Vehicle glass
- Windshield wiper system

Additionally, if an autocyple is equipped or designed with components similar in design to a motorcycle, those components must be inspected as if the autocyple were a motorcycle.

INSPECTION STICKER PLACEMENT

The inspection sticker must be placed in one of the following locations:

1. The left outer side of the windscreen as low as possible and located, so it does not interfere with the vision of the operator.
2. The front portion of the left fender.
3. The left fork leg, located so that it is easily visible.
4. A metal tag securely attached to the left front side of the frame.

**HEAVY
TRUCK
AND BUS**

HEAVY TRUCK AND BUS

Most heavy trucks must comply with the equipment standards contained in the Federal Motor Carrier Safety Administration Regulations Title 49 Code of Federal Regulations [Part 393](#).

WHEELS AND TIRES

TIRE INSPECTION – STEERING AXLE ONLY

Procedure: Examine tire for tread depth, wear, and regrooving.

Reject vehicle if:

1. Any tire has less than 4/32-inch tread when measured in any two adjacent major tread grooves at any location on the tire.
2. Any part of the breaker strip or casing ply is showing in the tread.
3. Any regrooved tires are found on front axle that have a load-carrying capacity equal to or greater than 4,920 pounds on any truck or truck tractor.
4. Any recapped or regrooved tires are found on the steering axle of any bus.
5. Mixing bias and radial tires on the same axle.

TIRE INSPECTION – ALL AXLES

Procedure: Examine tire for air pressure, restricted usage, cord exposure (bias ply and radial), mounting, damage, and tread depth.

Reject vehicle if:

1. Any tire is flat or has a noticeable leak (e.g., can be heard or felt).
2. Any tire is marked “NOT FOR HIGHWAY USE” or is otherwise equivalently marked.
Exception: Floatation tires on any axle used on vehicles designed and used to transport waste from a waste treatment plant are acceptable if restricted to a maximum speed.
3. Any tire has cord exposed in the tread area or sidewall.
4. Any tire is so mounted or inflated that it contacts any part of the vehicle (this includes any tire contacting its mate in a dual set).
5. Any tire has a visually observable bump or knot apparently related to tread or sidewall separation.

6. Any tire is so worn that less than 2/32 inch of tread remains when measured in any two adjacent major tread grooves at three locations spaced approximately equally around the outside of the tire.

WHEEL AND RIM INSPECTION

Procedure: Examine disc wheels.

Reject vehicle if:

1. Any disc wheel has any crack.
2. Any stud or bolt holes are elongated.

Procedure: Inspect lock or side ring.

Reject vehicle if:

1. Lock or side rings are bent, broken, cracked, improperly seated, sprung, or mismatched.

Procedure: Examine for rim cracks.

Reject vehicle if:

1. There is any circumferential crack, except at a valve hole.

Procedure: Examine spoke wheel for cracks.

Reject vehicle if:

1. There are any cracks in any location.

Procedure: Examine fasteners.

Reject vehicle if:

1. Fasteners are loose, defective, or missing (both spoke and disc wheels).

Procedure: Examine welds.

Reject vehicle if:

1. There are any cracks in welds attaching disc wheels to rims.
2. There are any cracks in welds attaching tubeless demountable rims to adapters.
3. There are any welded repairs on aluminum wheels.

- There are any welded repairs other than disc-to-rim attachment on steel disc wheels.

STEERING MECHANISM AND SUSPENSION

The steering system of the vehicle must be inspected for excessive wear and/or maladjustment of the linkage and/or steering gear. Vehicles equipped with power steering must have the engine running, with fluid level and belt tension adequate, before testing.

The suspension system must be inspected for excessive wear, cracks, or breakage that would prevent securement of the vehicle's axles to the vehicle frame.

Procedure: Examine steering wheel.

Reject vehicle if:

- The steering wheel is not properly secured or if it has any cracked through or missing spokes.

Procedure: Examine steering lash.

Reject vehicle if steering wheel lash exceeds the following:

Steering Wheel Diameter	Manual Steering System	Power Steering System
16 inches or less	2 inches	4½ inches
18 inches	2¼ inches	4¾ inches
20 inches	2½ inches	5¼ inches
22 inches	2¾ inches	5¾ inches

Procedure: Examine steering column.

Reject vehicle if:

- Any U-bolts or positioning parts are missing or loose.
- There are any welded universal joints or if there are any obvious repairs made.
- The steering column fails to lock into position.

Procedure: Examine front axle beam.

Reject vehicle if:

1. Any cracks are present.
2. There are any obvious welded repair(s).

Procedure: Examine steering gear box.

Reject vehicle if:

1. Any mounting bolt is loose or missing.
2. There are any cracks in the gearbox or mounting brackets.

Procedure: Examine pitman arm.

Reject vehicle if:

1. There is any looseness of the pitman arm on the steering gear output shaft.

Procedure: Examine power steering.

Reject vehicle if:

1. The auxiliary power-assist cylinder is loose.
2. Power steering fluid is leaking or dripping from any point in the system and fluid in the reservoir is below the proper operating level.

Procedure: Examine ball and socket joints.

Reject vehicle if:

1. Any stud nut moves under steering load.
2. There is any motion, other than rotational, between any linkage member and its attachment point of more than 1/4 inch.
3. There are any obvious welded repairs.

Procedure: Examine the tie rod and drag links.

Reject vehicle if:

1. There are any loose clamps or clamp bolts on tie rods or drag links.
2. There is any looseness in any threaded joint.

Procedure: Examine nuts.

Reject vehicle if:

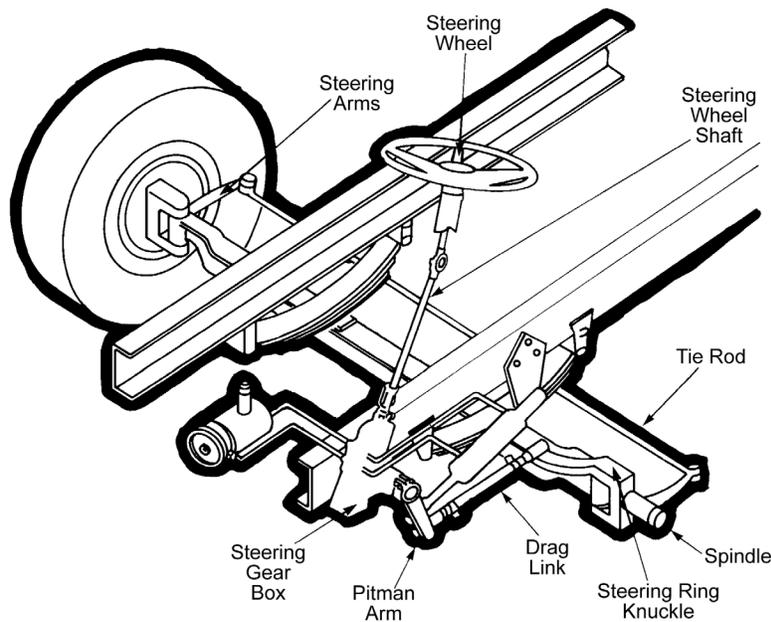
1. There are loose or missing nuts on tie rods, the pitman arm, drag links, steering arms, or tie rod arms.

Procedure: Examine steering system.

Reject vehicle if:

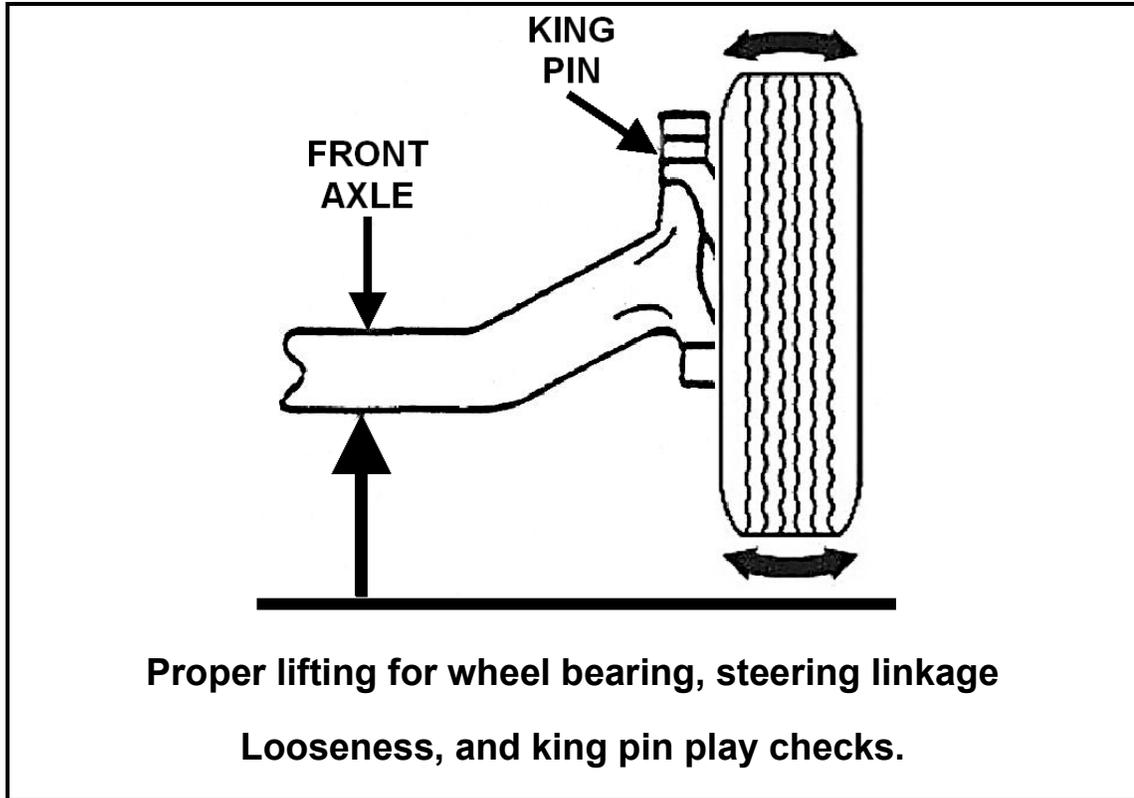
1. Any modification or other condition interferes with the free movement of any steering component.

HEAVY TRUCK STEERING SYSTEM



Procedure: Examine king pin.

1. Grasp the top and bottom of the tire (or use pry bar) and attempt to rock it in and out to determine king pin looseness, as in the diagram below.
2. Measure the movement at the top or bottom of the tire at the outer circumference using a dial indicator.



Reject vehicle if:

1. If there is movement at the top or bottom of the tire greater than:

Wheel Diameter	
16 inches or less	1/4 inch (6.5 mm)
17 inches to 18 inches	3/8 inch (9.5 mm)
More than 18 inches	1/2 inch (13 mm)

SUSPENSION

Procedure: Examine axle parts/members.

Reject vehicle if:

1. Any U-bolt, spring hanger, or other axle positioning part is cracked, broken, loose, or missing or if axles are not in proper alignment.

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

Procedure: Examine suspension.

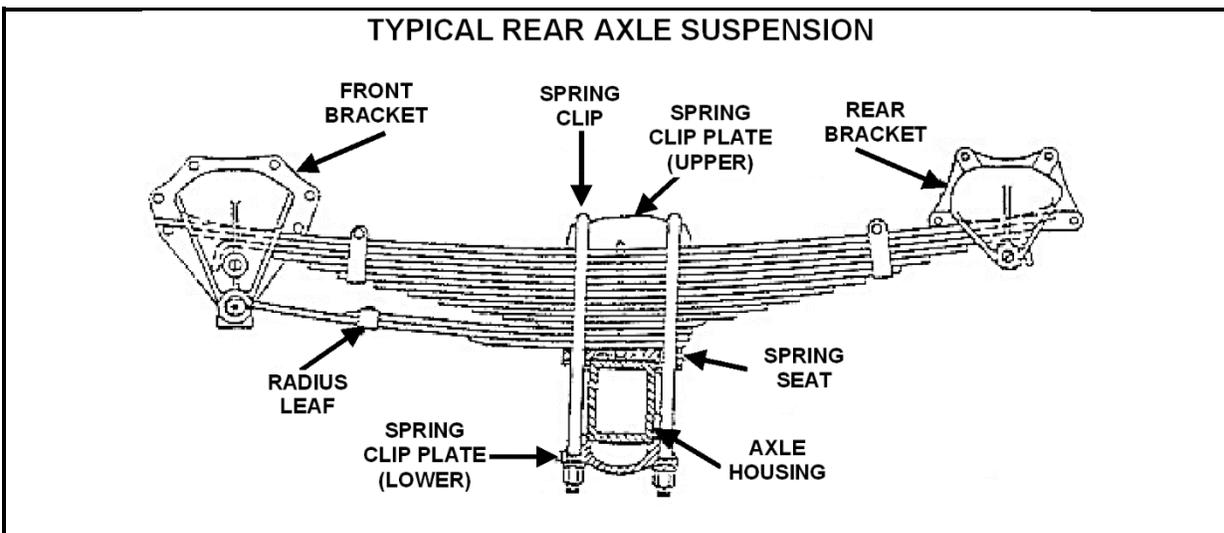
Reject vehicle if:

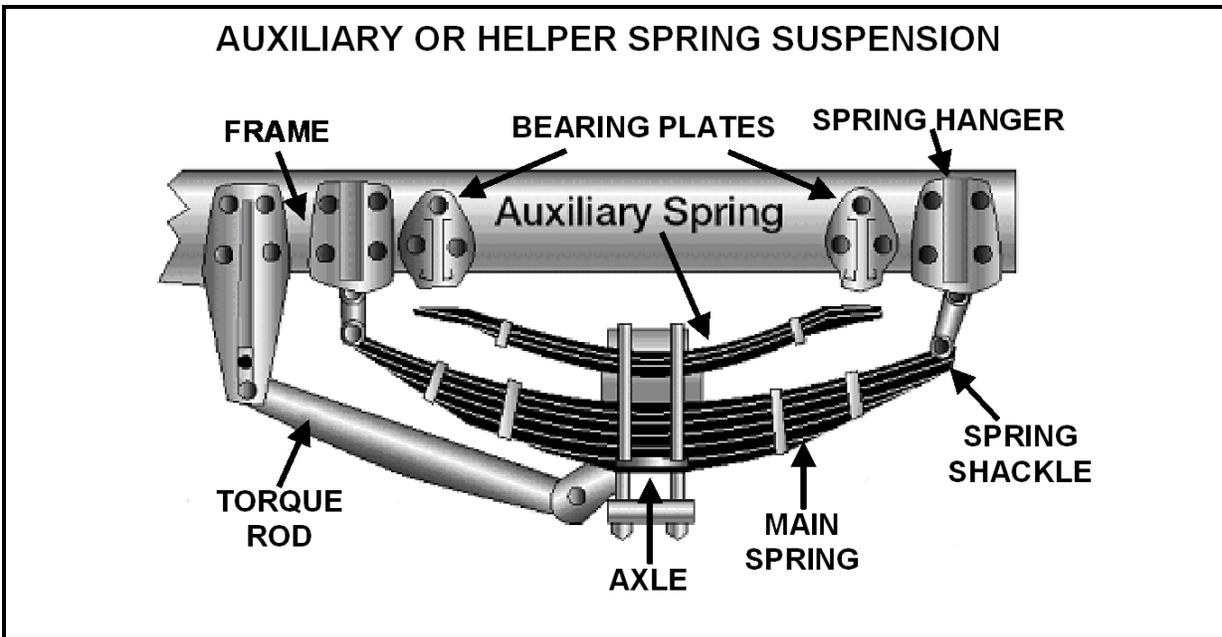
1. Any leaf in a leaf spring assembly is cracked, broken, missing, or shifted out of position.
2. The coil spring is cracked or broken.
3. There is a broken torsion bar spring in a torsion bar suspension.
4. Air suspension is deflated due to a system failure, leak, etc.
5. Spring shackles, pins, and bushings are worn to a point where the spring shackles contact the frame.

Procedure: Examine torque, radius, or tracking components.

Reject vehicle if:

1. Any torque, radius, or tracking component assembly or any part used for attaching them to the vehicle frame or axle is cracked, loose, broken, or missing (including missing bushings or bushings worn to the extent that they can be moved by hand along the axis of the component, but not loose bushings in torque or track rods).





HEIM JOINTS – CONTROL ARM ASSEMBLIES

The design of some upper and/or lower control arm assemblies consist of an inner steel sleeve mounted in a rubber bushing on one end of an adjustable or non-adjustable shaft and a ball joint on the other end of the shaft. The bushing end of the control arm is sometimes referred to as a heim joint.

Procedure:

1. With the vehicle lifted, properly grasp the tire at top and bottom, rock it in and out, and record movement. There should be no movement or play in the heim joint part of the control arm assembly.
2. Consult the manufacturer's accepted tolerance for ball joint wear.

Caution: If air-suspension vehicles are lifted via the body support area, air spring damage may occur if the air suspension switch is not turned off.

3. Check for deterioration of the rubber that bonds the inner bushing to the control arm on the heim joint.

Reject vehicle if:

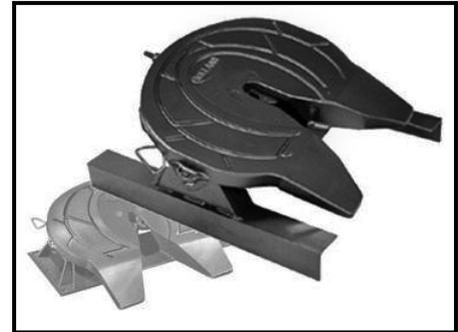
1. There is any play in the heim joint or the ball joint wear exceeds manufacturer limits.
2. The control arm is rusted to the point where its integrity is compromised.
3. There is zero play in the joint, but the rubber bushing is severely deteriorated. In this case, advise the owner to consider changing the assembly.



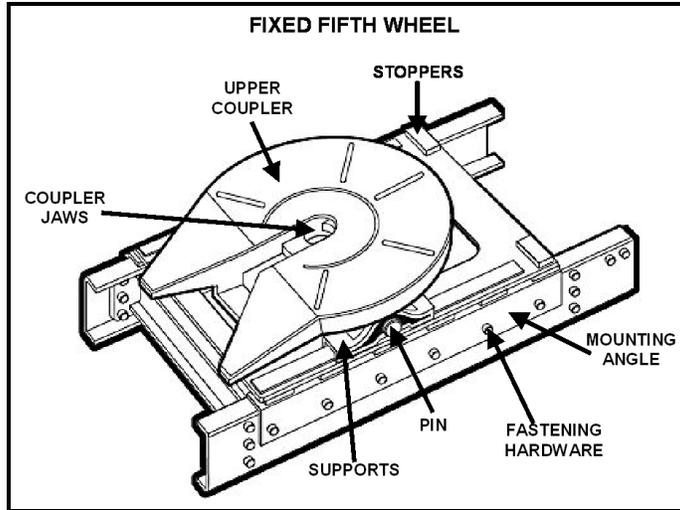
Illustrated is a typical control arm assembly composed of a ball joint and heim joint connected by an adjustable shaft.

COUPLING DEVICES**Procedure: If equipped, inspect fixed fifth wheel.****Reject vehicle if:**

1. Any fasteners on either side are missing or ineffective.
2. There is any movement between mounting components.
3. Any mounting angle iron is cracked or broken.

**Procedure: Examine mounting plates and pivot brackets.****Reject vehicle if:**

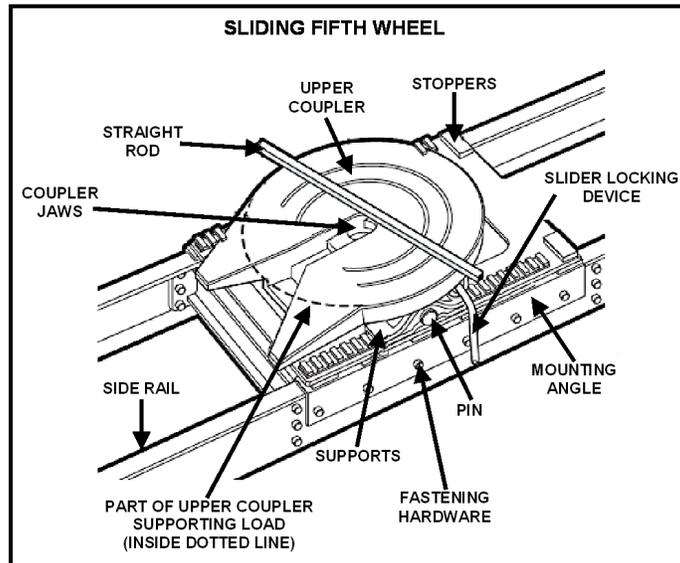
1. Any fasteners on either side are missing or ineffective.
2. There are any welds or parent metal cracks.
3. There is more than 3/8 inch of horizontal movement between the pivot bracket pin and the bracket.
4. The pivot bracket pin is missing or not secured.



Procedure: Examine sliding fifth wheel.

Reject vehicle if:

1. Any latching fasteners are missing or ineffective.
2. Any fore or aft stop is missing or not securely attached.
3. There is more than 3/8 inch of movement between the slider bracket and the slider base.
4. Any slider component is cracked in the parent metal or weld.



Procedure: Examine lower coupler.

Reject vehicle if:

1. The operating handle does not lock into position.
2. There are cracks in the fifth wheel plate.

Exceptions: Cracks in the fifth wheel approach ramps and casting shrinkage cracks in the ribs of the body of a cast fifth wheel should not result in rejection.

Procedure: Examine pintle hook mounting, if equipped.

Reject vehicle if:

1. There are any missing, loose, 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 and vice versa.

2. There are mounting surface cracks extending from points of attachment.
3. The vehicle structure (i.e., frame or mounting plate) providing the pintle hook attachment is not secured or is cracked.
4. There are any cracks in pintle hook assembly.
5. Section reduction is visible when coupled (only if a semi-trailer/trailer is attached).

Note: No part of the horn eye should have any section reduced by more than 20 percent. If wear can be seen when the hook and eye are coupled, it is probable that either this condition or wear in the drawbar eye exists.

6. The locking device is ineffective or missing.
7. There are any welded repairs to the pintle hook.
8. The pintle hook does not pivot as designed.

LIGHTING AND ELECTRICAL SYSTEM

Procedure: Examine headlight adjustment. (Refer to [“Headlamp Aiming Information”](#) in the Pleasure Car and Light Truck Section.)

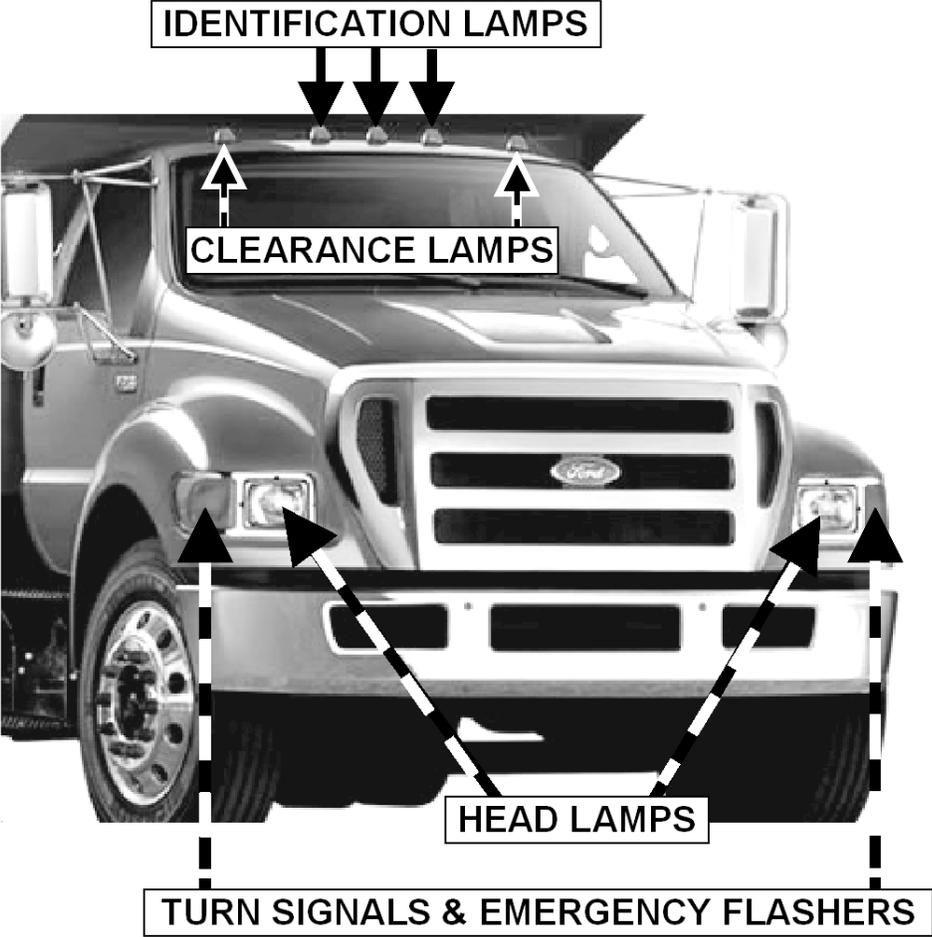
Reject vehicle if:

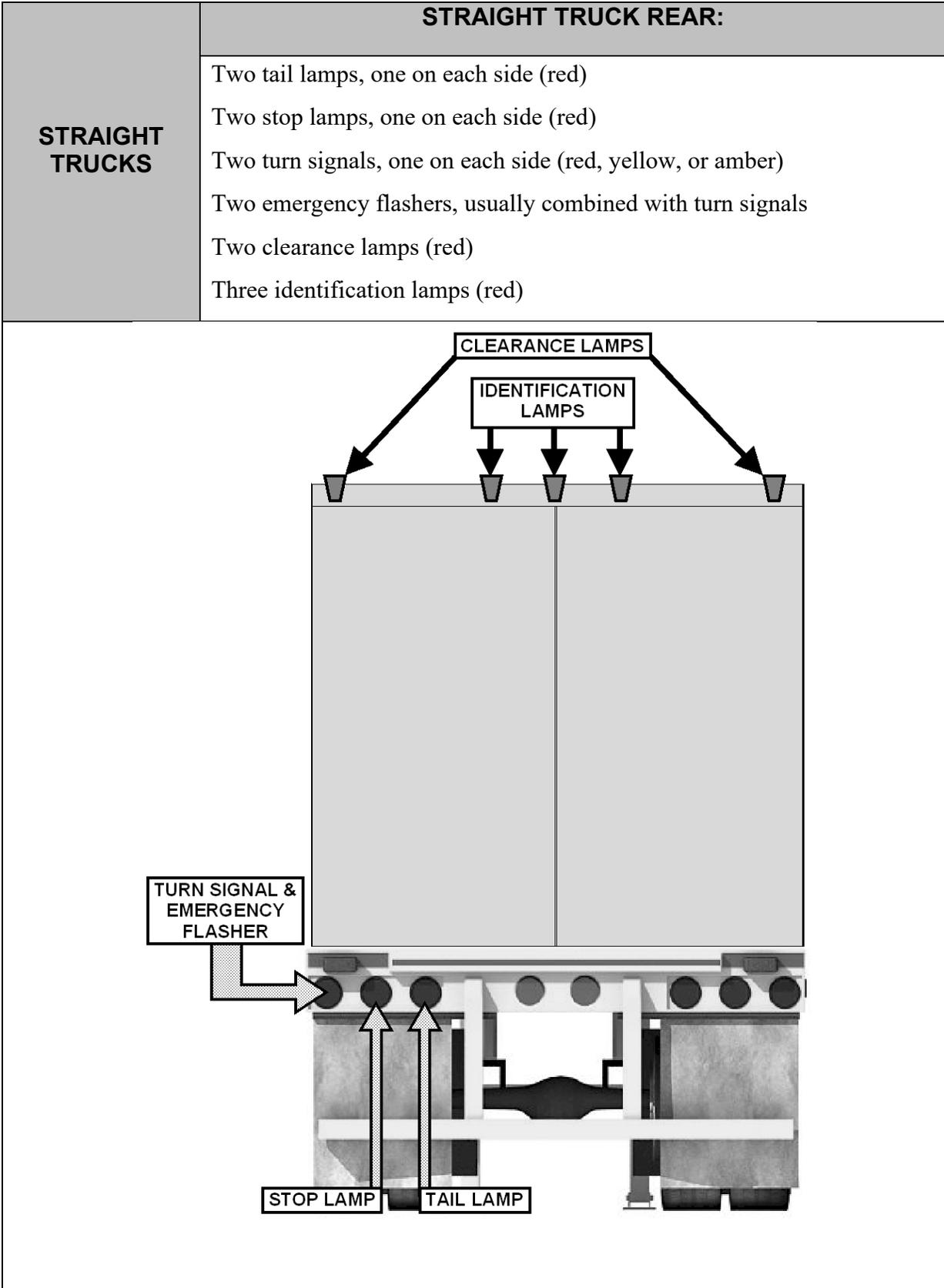
1. The vehicle does not meet the following high beam and low beam minimum limits:
 - a. If the horizontal aim is more than:
 - 4 inches to the **left** or
 - 4 inches to the **right**
 - b. If the vertical aim is:
 - Higher than 4 inches **up** or
 - Lower than 4 inches **down**

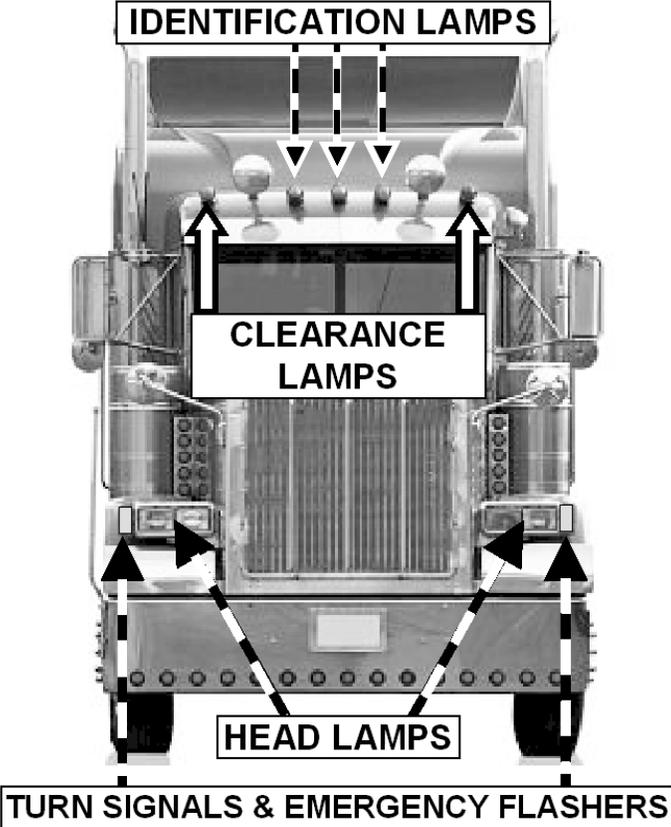
Procedure: Examine all other lamps for missing, inoperative, improper color, insecure mounting, or poor electrical connection.

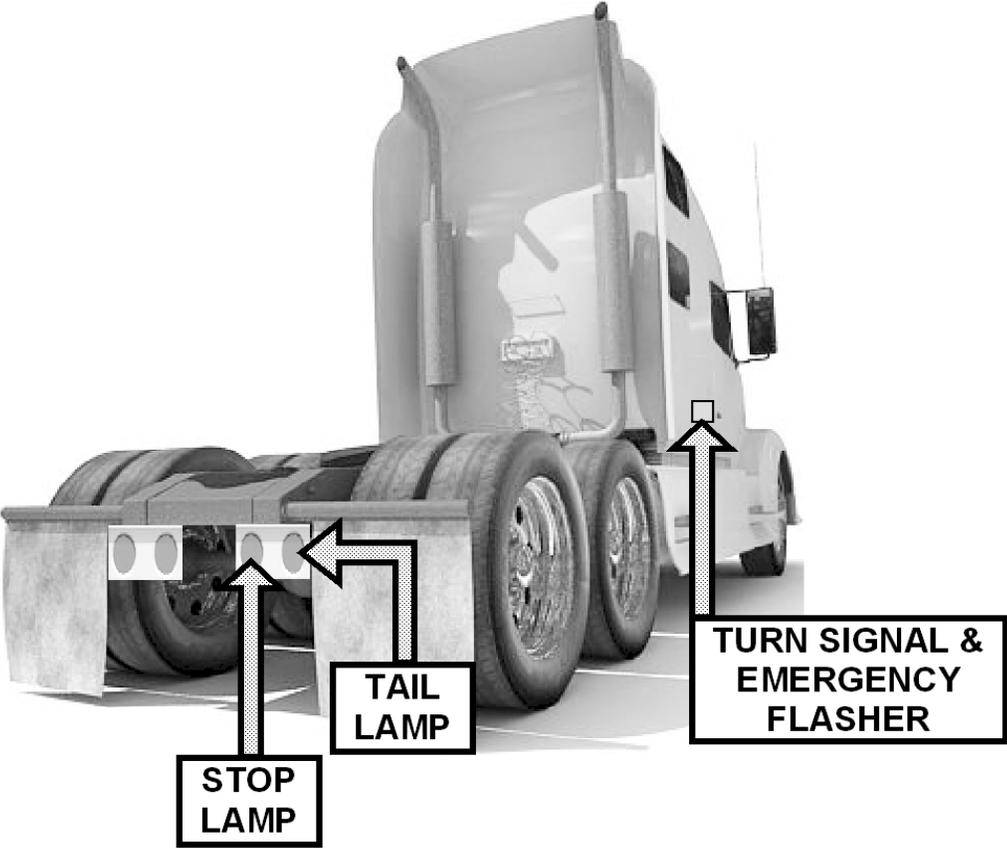
Reject vehicle if:

1. There is not at least one operative stop lamp on the rear of a single-unit vehicle (if equipped with two, both must work).
2. There is not an operative turn signal on each side of the front and rear of a single-unit vehicle.
3. The vehicle does not have at least one steady-burning red lamp on the rear visible from 500 feet. If equipped with two, both must work.
4. Hazard lamps do not function as prescribed in the Pleasure Car/Light Truck Section.
5. Additional lighting and reflectors do not meet the standards on the following pages, including:
Parking lamps, reflectors, identification lamps, clearance lamps, side marker lamps, license plate lamps, backup lamps.

STRAIGHT TRUCK FRONT:	
STRAIGHT TRUCKS	At least two headlamps, an equal number on each side (white)
	Two turn signals, one on each side (white or amber)
	Two emergency flashers, usually combined with turn signals
	Two clearance lamps (amber)
	Three identification lamps (amber)
 <p>The diagram shows the front view of a heavy-duty straight truck. Labels with arrows point to various lighting components: 'IDENTIFICATION LAMPS' at the top of the roof, 'CLEARANCE LAMPS' on the upper corners of the windshield, 'HEAD LAMPS' on the front bumper, and 'TURN SIGNALS & EMERGENCY FLASHERS' on the lower corners of the front bumper. The truck is a Ford model, as indicated by the logo on the grille.</p>	



TRUCK TRACTOR – FRONT:	
TRACTORS	At least two headlamps, an equal number on each side (white)
	Two turn signals, one on each side (amber)
	Two emergency flashers, usually combined with turn signals
	Two clearance lamps (amber)
	Three identification lamps (amber)
 <p>The diagram shows a front view of a truck tractor. At the top, three identification lamps are indicated by dashed lines pointing to three small lamps on the roof. Below them, two clearance lamps are shown as larger lamps on the sides of the hood. At the bottom, two headlamps are shown on the lower front corners. At the very bottom, two turn signals and emergency flashers are shown on the lower front corners, indicated by dashed lines.</p>	

TRUCK TRACTOR – REAR:	
TRACTORS	A minimum of one tail lamp on back of frame (red)
	A minimum of one stop lamp on back of frame (red)
	Unless the turn signals on the front are double-faced and visible to passing drivers, two turn signals on the rear of the cab, one at each side (red, yellow, or amber)
	Two emergency flashers, usually combined with turn signals
	

VEHICLE GLASS

Procedure: Inspect glass for proper markings. (Refer to [Pleasure Car/Light Truck Section.](#))

Reject vehicle if:

1. Improper or unmarked glazing materials are used for specific positions.

2. Nontransparent materials, such as plywood, plastic sheathing, or similar materials, are used to replace glass.

STICKERS – TINTING

Procedure: Inspect glass for unauthorized material or conditions obscuring driver's vision.

Reject vehicle if:

1. Glazed surfaces contain any stickers not permitted by law.
2. Unauthorized tinting material has been used or if any aftermarket tinting material is sprayed, pasted, stuck, or otherwise applied to the windshield or windows directly to the right or left of the driver.

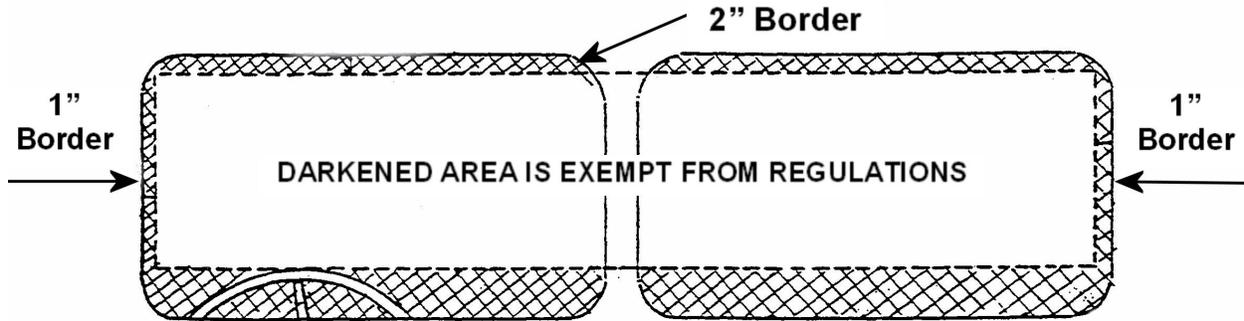
Note: Only the rear side windows and the back window may be obstructed, provided that the motor vehicle is equipped with a rearview mirror on each side.

CRACKS, CHIPS, AND DISCOLORATION

Procedure: Inspect Windshield for damage or discoloration.

Reject vehicle if:

1. Any intersecting cracks are present, discoloration is present that was not applied in manufacture, or other vision distorting matter is present in the sweep of the wiper path on the driver's side.
2. Any windows are broken or have exposed sharp edges.
3. The rear window is so discolored that the driver does not have a clear view 200 feet to the rear of the vehicle unless the vehicle is equipped with a passenger side mirror.
4. There is any damaged area more than 3/4 inch in diameter or if there is a damaged area less than 3/4 inch in diameter within 3 inches of any other damaged area.

**Advise customer if:**

1. There are any signs of the beginning of glazing discoloration.

BRAKE SYSTEMS**Road Test – Performance Ability of Brakes**

Brakes should perform as outlined in [23 VSA §1308](#).

Procedure:

1. The service brakes upon any motor truck, truck, and tractor or combination of vehicles must be adequate to stop such vehicle or vehicles, when traveling 20 MPH, within a distance of 30 feet on a dry asphalt or concrete pavement surface, free from loose material, where the grade does not exceed 1 percent.
2. The hand brake must be adequate to hold such vehicle or vehicles stationary on any grade upon which it is operated.
3. All braking distances specified in this section apply to all vehicles mentioned, whether they are not loaded or they are loaded to the maximum capacity permitted.
4. All brakes must be maintained in good working order and properly adjusted. The mechanic must verify that brakes are within adjustment limits before inspecting the braking system. See APPENDIX B for additional instruction if needed.

Reject vehicle if:

1. Brakes do not meet one or more of the above requirements.

Note: Trucks and truck-tractors manufactured before July 25, 1980, having three or more axles need not have brakes on the front axle.

Hydraulic Brakes

Procedure: Examine master cylinder for fluid level.

Advise owner if:

1. The master cylinder is less than 1/4 full.

Procedure: Examine all lines and hoses and wheel areas for visual leaks, worn brake hoses, and crimped or restricted lines.

Reject vehicle if:

1. A brake hose seeps or swells under the application of pressure.
2. There is any visually observed leaking hydraulic fluid in the brake system.
3. Any hydraulic hose is chafed through the outer cover to the fabric layer.
4. Fluid lines or connections are restricted, crimped, cracked, or broken.

Procedure: Examine brake pedal reserve.

Reject vehicle if:

1. The pedal descends to the floor upon the first application
2. There is no pedal reserve with the engine running except by pumping the brake

Procedure: Examine vacuum-assisted hydraulic system. While depressing brake pedal, start engine. If the power unit is working, the pedal should drop under foot pressure.

Reject vehicle if:

1. The power-assist unit fails to operate.

Procedure: Examine brake failure lamp or low brake fluid lamp.

Reject vehicle if:

1. The lamp fails to illuminate during the indicator lamp test sequence or if the lamp remains illuminated after the lamp test sequence has finished.

BROKEN OR UNSECURED PARTS AND LOOSE CONNECTIONS

Procedure: Visually examine brake components.

Reject vehicle if:

1. No braking action occurs upon the application of the service brakes.
2. There are missing or broken components, such as shoes, linings, pads, springs, anchor pins, spiders, cam rollers, push rods, or air chamber mounting bolts.
3. Components are loose or insecurely mounted.
4. There is an audible air leak at the brake chamber.
5. Any lining or pad is not firmly attached to the shoe or is saturated with oil, grease, or brake fluid.
6. Mismatched brake chamber types/sizes are present across an axle.
7. Slack adjusters of mismatched effective lengths are present across an axle.

BRAKE LINING

Procedure: Visually examine brake lining for excessive wear, missing pieces, or oil/grease saturation.

Reject vehicle if:

1. **Steer axle:** The lining thickness is less than 3/16 inch for a shoe with a continuous strip of lining, less than 1/4 inch for a shoe with two pads for drum brakes or to the wear indicator if lining is so marked, less than 1/8 inch for air disc brakes, or 1/16 inch or less for hydraulic disc and electric brakes.
2. **All other axles:** The vehicle is equipped with air brakes, and the lining is less than 1/4 inch thick. The vehicle is equipped with drum brakes and the lining is worn to the wear indicator (if so marked) measured at the shoe center. The vehicle is equipped with disc brakes and the lining is less than 1/8 inch. The vehicle is equipped with hydraulic or electric brakes, and the lining is 1/16 inch or less in thickness at the shoe center for drum brakes.
3. There is a missing brake on any axle required to have brakes.
4. Any brake lining is saturated with oil or grease.

BRAKE ROTORS

Procedure: Visually examine rotors for warping, excessive rust and corrosion, rotor thickness, and cracks of rotor friction surfaces.

Reject vehicle if:

1. A rotor's thickness is less than the manufacturer's listed minimum tolerance.
2. Cooling vanes on vented rotors are corroded or rusted to the point where the rotor collapses when pressure is applied by the brake caliper.
3. A rotor is cracked across more than 75 percent of the friction surface when the friction surface is measured linearly from the inside diameter to the outside diameter.

BRAKE DRUMS

Procedure: Visually examine the brake drums.

Reject vehicle if:

1. The brake drums have any external cracks or any crack that opens upon brake application.
2. The friction surface of the drum is contaminated with oil, grease, or brake fluid.
3. The drum inside diameter is less than the limit established by the manufacturer.
4. Any portion of the brake drum is missing.

PARKING/HAND BRAKE

Procedure: Visually examine parking/hand brake components for proper function.

Reject vehicle if:

1. No brakes on the vehicle are applied upon activation of the parking/hand brake control, including the driveline hand-controlled parking/hand brake.

BRAKE HOSE AND TUBING

Procedure: Visually examine brake hose and tubing.

Reject vehicle if:

1. Hoses show 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 the cover and inner tube. The exposure of the second color is cause for rejection.

2. Bulging or swelling occurs when air pressure is applied.
3. There is an audible leak in a hose at other than at a proper connection.
4. Hoses are not joined using a proper connection.
5. Tubing is cracked, broken, or crimped.

AIR SYSTEM

Procedure: Examine the complete system for improper air loss.

Reject vehicle if:

1. An air leak is discovered and the reservoir pressure is not maintained when:
 - The governor is cut in.
 - Reservoir pressure is between 80 and 90 PSI.
 - The engine is at idle, and service brakes are fully applied.

Procedure: Release sufficient air from the system to cause the low air pressure warning device to activate.

Reject vehicle if:

1. The low air pressure warning device is missing, inoperative, or does not operate at 55 PSI and below or 1/2 the governor cut-out pressure, whichever is less.

Procedure: Examine air pressure gauge.

Reject vehicle if:

1. The gauge is missing, inoperable, or does not indicate pressure in pounds per square inch.

Procedure: Examine air reservoir.

Reject vehicle if:

1. Any mounting bolts are broken, missing, or loose (not including defective bushings).

Procedure: Examine air compressor.

Reject vehicle if:

1. Any mounting bolts are loose or mounting brackets are cracked.

- The pulley is loose, cracked, or broken.

Procedure: Visually examine vacuum brake system.

Reject vehicle if:

- The vacuum reserve is insufficient to permit one full brake application after the engine is shut off.
- Any vacuum hose or line is restricted, chafed through the outer cover to the cord ply, crimped, cracked, broken, or if the vacuum hose collapses when vacuum is applied.
- The low vacuum warning device is missing or inoperative.
- The vacuum gauge that indicates to the driver the vacuum in inches of mercury available for braking is missing or inoperative.

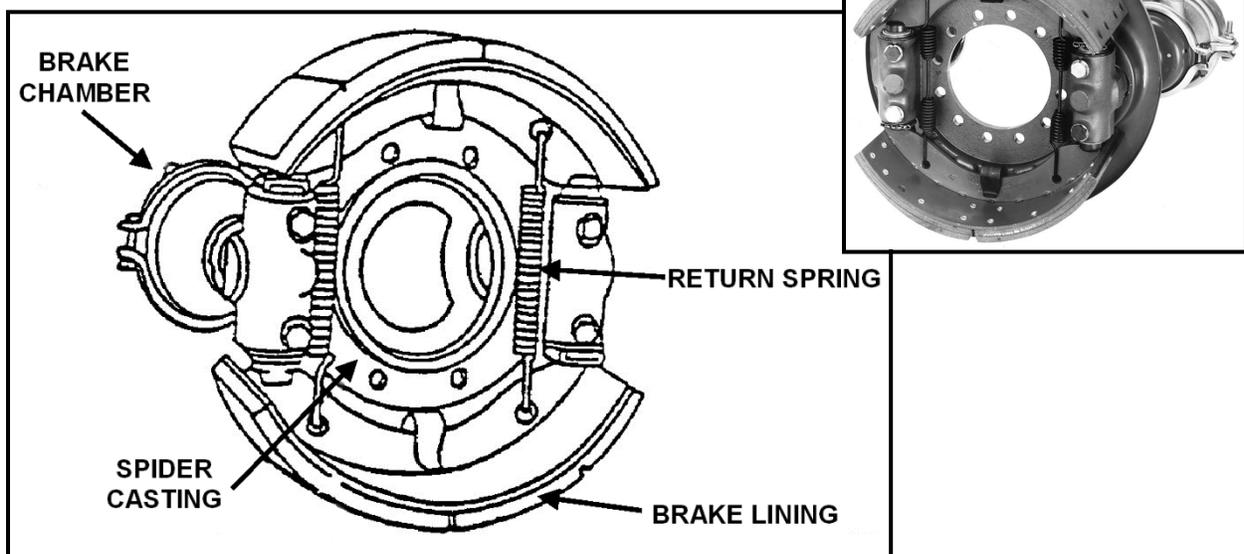
MEASURING PUSH ROD TRAVEL

Refer to [Appendix B](#) for complete instructions and a measurement chart.

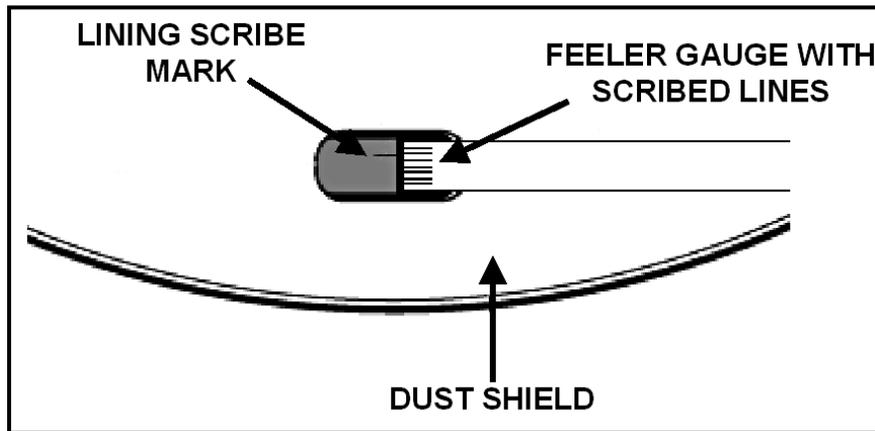
INSPECTING WEDGE BRAKE ADJUSTMENT

Procedure:

- With the inspection hole cover removed from the brake dust shield, check the adjustment at each wheel visually or by using a feeler gauge.

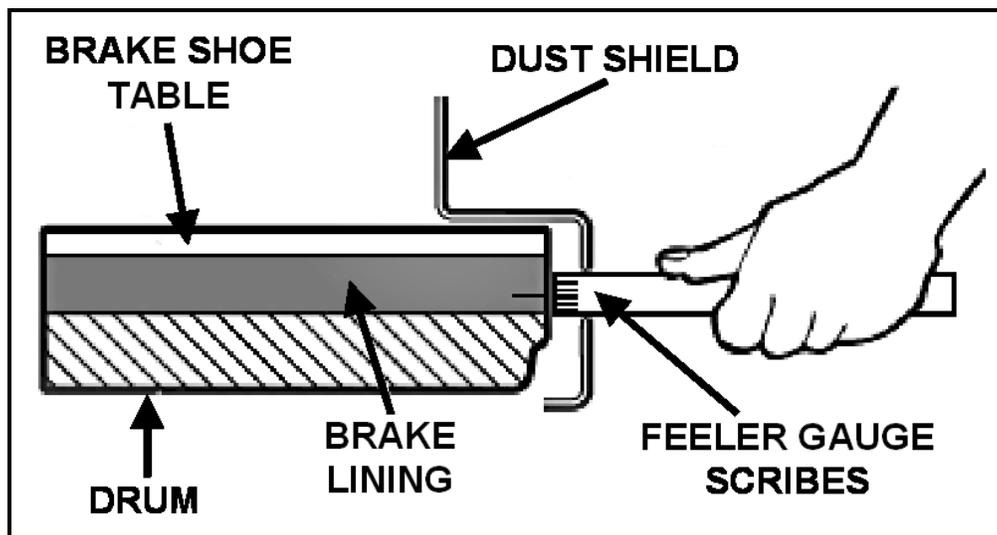


2. With the brakes fully released, inspect the distance from the drum to the brake shoe (lining surface). This distance must not exceed 1/16 inch. If using a feeler gauge, the gap must not exceed .0625 inch.



INSPECTING LINING WITH FEELER GAUGE

If the edge of the lining is not visible, mark the lining and then apply the brakes. When the brake shoe moves, watch the mark or measure the movement with a gauging device. Any brake shoe travel beyond 1/16 inch (.0625 inch) is excessive. Failure of the brake shoes to move is a condition of improper maintenance.



ANTI-LOCK BRAKING SYSTEM (ABS)

Procedure: Examine ABS.

Reject vehicle if:

1. The ABS malfunction lamp fails to illuminate or stays illuminated after lamp test.

Note: In the U.S., the following vehicles are exempt from the requirements to have an ABS:

- Any vehicle equipped with an axle that has a gross axle weight rating (GAWR) of 29,000 pounds or more.
- Any truck or bus that cannot attain a speed of more than 33 MPH in 2 miles.
- Any truck that cannot attain a speed of more than 45 MPH in 2 miles, an unloaded vehicle weight no less than 95 percent of its GVWR, and no capacity to carry occupants other than the driver and operating crew.

FUEL SYSTEM

Procedure: Visually examine fuel tanks, fuel lines, and mounting hardware, including tanks, lines, and mounting hardware for refrigeration or heating units.

Reject vehicle if:

1. The fuel system has a visible leak at any point.
2. Any tank is not securely attached to the motor vehicle by reason of loose, broken, or missing mounting bolts or brackets.
3. The fuel tank filler cap is loose or missing.
4. A fuel tank extends outside the perimeter of the vehicle.
5. Fuel lines are routed so that damage to them is likely to occur.
6. The fill pipe is **not** located outside the passenger compartment and in an area where fuel cannot spill onto the exhaust system while filling.
7. There is no internal venting system for tanks that can contain 25 gallons or more.

EXHAUST SYSTEM

The exhaust system includes the piping leading from the flange of the exhaust manifold to and including the mufflers, resonators, and tail piping.

Procedure:

1. Visually examine the mufflers, resonators, tailpipes, exhaust pipes, and supporting hardware.
2. Rusted or corroded surfaces should be given particular attention.
3. Holes in the system made by the manufacturer for drainage are not cause for rejection.

Reject vehicle if:

1. The exhaust system on a truck is leaking at a point forward of or directly below the driver/sleeper compartment.
2. There are loose or leaking joints.
3. There are holes caused by corrosion, leaking seams, or patches on the muffler or tailpipe.
4. Elements of the system are not securely fastened.
5. The tailpipe end is pinched.
6. Exhaust stacks are located where a person may be burned while entering or leaving the vehicle.
7. Any part of the system passes through the occupant compartment.
8. Any bus exhaust system leaks or discharges under the chassis more than 6 inches forward of the rearmost part of a gasoline-engine-powered bus or more than 15 inches forward of the rearmost part of a bus powered by other than a gasoline engine.
9. Any part of the exhaust system is located where it would be likely to burn, char, or damage the electrical wiring, fuel supply, or any combustible part of the vehicle.

VEHICLE INTERIOR

Note: The vehicle interior examination must be performed according to the procedures outlined in the [Pleasure Car and Light Truck Section](#) unless additional procedures are described below.

Items include:

1. SPEEDOMETER AND ODOMETER/HUBOMETER

2. HORN

3. WINDSHIELD WIPERS

4. DEFROSTERS

SEATS, SEAT BELT ASSEMBLIES, AND SEAT BELT ASSEMBLY ANCHORAGES

Procedure: Examine seats and seat belt assemblies.

Reject vehicle if:

1. Equipment does not conform to a Federal Motor Vehicle Safety Standard specific to the year of manufacture.

BODY AND SHEET METAL

Note: The examination of exterior components must be performed in accordance with the procedures outlined in the [Pleasure Car and Light Truck Section](#) unless additional procedures are outlined below.

1. EXTERIOR REARVIEW MIRROR(S)

2. BUMPERS

3. DOORS

4. HOOD

5. FLOOR PAN

6. PROTRUDING METAL

7. CAPS AND BED LINERS

FLAPS AND FENDERS

Procedure: Inspect fenders and flaps.

If flaps are required according to [23 V.S.A. § 1306](#), the following standards will be followed:

The splash pans stone throw protection device must extend laterally for at least the width of the tires and must be composed of materials substantial enough to withstand ripping or tearing by ordinary means. They also must be long enough so that the clearance from the ground to the bottom edge of the device is not more than half the distance from the bottom edge of the device to the center line of the rearmost axle of the vehicle. However, the bottom edge of the device need be no closer to the road than 6 inches when loaded.

Reject vehicle if:

1. Fenders or flaps are not solidly attached.
2. Fenders or flaps are not constructed of substantial materials.
3. Fenders or flaps are not of sufficient size or are not attached properly.
4. Fenders or flaps do not meet the criteria set out in the following pictures.
5. Fenders do not cover the entire tread width.
6. Fenders or flaps come into contact with the tire or wheel.

FRAME

The purpose of the inspection is to determine, through visual inspection, whether there are any defects in the frame rails or cross members.

BASIC FRAME COMPONENTS

- Two Frame Rails: The frame rails are the foundation of the vehicle. The engine, transmission, cab, suspension, etc., are attached to it.
- Cross Members: Cross members hold the frame rails the proper distance apart and control rotational and longitudinal motion. They provide protection and support for wires and air lines that cross the vehicle from one side to the other.

Procedure: Examine frame members.

Reject vehicle if:

1. Any frame member is cracked, loose, sagging, or broken.
2. Any bolts or brackets securing the cab or body to the frame are loose, broken, or missing.
3. Any frame rail flange between the axles is bent, cut, or notched, except as specified by the manufacturer.

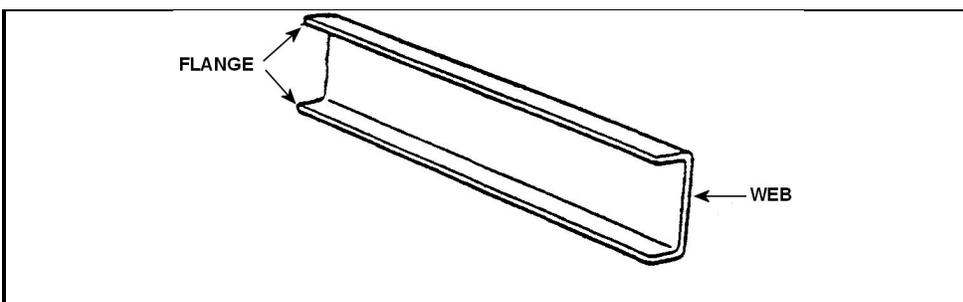
4. Any hole is drilled in the top or bottom rail flanges, except as specified by the manufacturer.

Procedure: Examine tire and wheel clearance.

Reject vehicle if:

1. Any condition, including loading, causes the body or frame to be in contact with a tire or any part of the wheel assemblies at the time of inspection.

FLANGE AND WEB PORTIONS OF A FRAME RAIL



SAFETY DEVICES

Procedure: Inspect for presence of emergency warning devices.

Advise customer if:

1. The vehicle is not transporting hazardous materials, and there is not three reflective triangles, or six fuses, or three liquid burning flares in the vehicle.
2. The vehicle is transporting hazardous materials, and there is not three reflective triangles in the vehicle.

SPECIALIZED VEHICLES

Registration may be required on a variety of vehicles, such as bucket loaders, road making appliances, highway building equipment, tractors, and others. The act of registration requires these vehicles to be inspected. Because these vehicles are not equipped with passenger-carrying facilities and are often not for nighttime use, the complete requirements need not be met unless the vehicle came so equipped. However, these vehicles must meet the following minimum requirements: they must have adequate tires, brakes, muffler, and number plate brackets; the complete vehicle must be in good mechanical condition; and if the vehicle is equipped with lights, they must be of an approved type and in good operating condition.

TRAILERS

TRAILERS

COUPLING DEVICES

Note: For pintle hooks, refer to the [Heavy Truck and Bus Section](#).

Procedure: Examine drawbar eye and tongue for mounting and integrity.

Reject vehicle if:

1. Any cracks are present in any area.
2. There are any missing or ineffective fasteners.
3. There is movement of 1/4 inch or more between the outer frame and the drawbar at point of attachment.

Procedure: Examine safety devices for trailers without fifth wheel coupling devices.

Reject vehicle if:

1. A safety chain or cable is not present.
2. The ultimate strength of the chain or cable is not equal to or greater than the gross weight of the trailer and load being towed.
3. Safety chains are incapable of secure attachment.
4. Chain or hooks:
 - a. Are worn to the extent of a measurable reduction in link cross-section.
 - b. There are improper repairs, including welding, wire, small bolts, rope, or tape.
 - c. Links in the safety chain are broken, bent, twisted, or stretched.
5. Cable strands are kinked or broken.
6. There are improper clamps or clamping.

WHEELS AND TIRES

Procedure: Examine tires.

Refer to "[Pleasure Car and Light Truck](#)" section, pages 31-32.

LIGHTING

Procedure: Examine taillights, turn signals, stop lamps, hazard-warning lamps, clearance lamps, identification lamps (trailer or semi-trailer more than 80 inches wide), and license plate lamp for functionality.

Note: Refer to the [Heavy Truck and Bus Section](#) for more information on lighting on trailers and semi-trailers.

Reject vehicle if:

1. Trailer does not have at least one steady-burning red tail lamp (if more than one, all must work).
2. The trailer does not have an operating turn signal on each side if manufactured after January 1, 1955.
3. The trailer does not have at least one red operative stop lamp (if more than one, all must work).
4. Emergency flashers do not function properly.

Advise owner if:

1. The trailer is not equipped with two lamps to the front (amber), one on each side, and two lamps to the rear (red), one on each side, to mark the extreme width of the vehicle.
2. The trailer is more than 30 feet and is not equipped with one (amber) light on each side at the approximate center of the trailer.
3. Any of the above does not function properly.
4. The trailer is not equipped on the rear with three properly functioning red lamps, equally spaced about the vertical center line and as close to the top of the trailer as practical.
5. The trailer is not equipped on the rear with three properly functioning red lamps, equally spaced about the vertical center line and as close to the top of the trailer as practical.

BRAKES

Equipment Required

Requirement for trailers, semi-trailers, and trailer coaches – weight not exceeding 3,000 pounds.

- Brakes are not required as long as the weight of the trailer does not exceed 40 percent of the weight of the towing vehicle.

Requirement for trailers, semi-trailers, and trailer coaches – weight more than 3,000–6,000 pounds.

- Brakes are required on at least one axle, and the trailer must also be equipped with a breakaway brake device.

Requirement for trailers, semi-trailers, and trailer coaches – weight more than 6,000 pounds.

- Brakes are required on all wheels, and the trailer must be equipped with breakaway brake device.

ELECTRIC BRAKES – FUNCTION**Procedure: Examine for brake operation; loose or corroded terminal connections; and broken, frayed, or unsupported wires.****Reject vehicle if:**

1. Braking action is absent on one or more of the wheels required to be equipped with brakes.

Advise customer if:

1. Electrical terminals are loose or excessively corroded.
2. Wires or connectors are broken, frayed, or not properly supported.

Procedure: Examine for breakaway brake device.

1. Pull the pin in the device and observe the automatic brake application.

Reject vehicle if:

1. The breakaway brake device is missing or inoperable.
2. Brakes do not release when the pin is returned to the breakaway switch.
3. Brakes do not remain applied for at least 15 minutes.

EMERGENCY BRAKE – MANUAL CONTROL**Procedure: Brakes can be checked for operation by activating manual control without activating tractor service brakes and attempting to move the trailer while brakes are applied.****Reject vehicle if:**

1. Brakes do not apply and release by activating manual control.

EMERGENCY BRAKE – AIR ONLY**Procedure:**

1. Connect trailer couplings and build up the system to the governor cutout point.
2. Stop the engine, operate the control, and observe the automatic trailer brake application.
3. Make a series of foot brake applications and observe the automatic trailer brake application.

Reject vehicle if:

1. Emergency brakes do not apply automatically between 20 and 45 PSI.
2. Brakes apply automatically when the tractor pressure is above 45 PSI.
3. Brakes fail to apply automatically when pressure is applied by foot.
4. When trailer couplings are disconnected, the brakes on the trailer do not automatically apply.

HYDRAULIC BRAKES – SURGE BRAKES – VACUUM-ASSISTED HYDRAULIC**Procedure: Examine all lines and hoses and all-wheel areas for visual leaks, worn brake hoses, and crimped or restricted lines.****Reject vehicle if:**

1. Any brake hose seeps or swells under the application of pressure.
2. There is any visually observed leaking hydraulic fluid in the brake system.
3. Any hydraulic hose is chafed through the outer cover to the fabric layer.
4. Any fluid lines or connections are restricted, crimped, cracked, or broken.

Procedure: Examine vacuum-assisted hydraulic system.

1. Depress pedal hard and, while holding it, start the engine.
2. If the power unit is working, the pedal should drop appreciably under foot pressure.

Reject vehicle if:

1. The power-assist unit fails to operate.

Procedure: Examine master cylinder for fluid level, if visible and problems are apparent.**Advise customer if:**

1. The master cylinder is less than 1/4 full.

BROKEN OR UNSECURED PARTS AND LOOSE CONNECTIONS**Procedure: Visually examine brake components.****Reject vehicle if:**

1. No braking action occurs upon application of the service brakes.
2. There are missing or broken components, such as shoes, linings, pads, springs, anchor pins, spiders, cam rollers, push rods, or air chamber mounting bolts.
3. Components are loose or insecurely mounted.
4. There is an audible air leak at the brake chamber.
5. Any lining or pad is not firmly attached to the shoe or is saturated with oil, grease, or brake fluid.
6. Any brake is beyond its adjustment limit.
7. There are mismatched brake chamber types/sizes present across an axle.
8. There are slack adjusters of mismatched effective lengths present across an axle.

BRAKE LINING**Procedure: Visually examine brake lining for excessive wear, oil or grease saturation, or missing pieces.****Reject vehicle if:**

1. The vehicle is equipped with air brakes, and the lining is less than 1/4 inch thick, or if the lining is worn to the wear indicator (if so marked) measured at the shoe center for drum brakes, or if the lining is less than 1/8 inch thick for disc brakes.
2. The vehicle is equipped with hydraulic or electric brakes, and the lining is 1/16 inch thick or less at the shoe center for drum brakes.
3. There is a missing brake on any axle required to have brakes.

4. Any brake lining is saturated with oil or grease.

BRAKE DRUMS

Procedure: Visually examine the brake drums for cracks.

Reject vehicle if:

1. The brake drums have any external cracks or any crack that opens upon brake application.
2. The friction surface of the drum is contaminated with oil, grease, or brake fluid.
3. Any portion of the brake drum is missing.

BRAKE HOSE AND TUBING

Procedure: Visually inspect brake hose and tubing for damage, leaks, and improper splicing.

Reject vehicle if:

1. Hoses show 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. Bulging or swelling occurs when air pressure is applied.
3. There is an audible leak in a hose other than at a proper connection.
4. Hoses are not joined using a proper connection (hose splices are not approved).
5. Tubing is cracked, broken, or crimped.

AIR SYSTEM

Procedure: Inspect the complete braking system.

Reject vehicle if:

(Improper Air Loss)

1. Valves are missing or inoperable.
2. Trailer brakes fail to activate properly.

(Air Reservoir)

1. Mounting bolts are broken, missing, or loose (not including defective bushings).
2. Mounting brackets are cracked.

(Vacuum Brake)

1. The vacuum reserve is insufficient to permit one full brake application after the engine is shut off.
2. Any vacuum hose or line is restricted, chafed through the outer cover to the cord ply, crimped, cracked, or broken or if a vacuum hose collapses when vacuum is applied.

MEASURING PUSH ROD TRAVEL

Refer to [Appendix B](#) for full instructions and a measuring chart.

ANTI-LOCK BRAKING SYSTEM (ABS)

Procedure: Inspect antilock brake system in accordance with the ABS inspection procedure described in the table below.

Reject vehicle if:

1. The ABS, including the ABS malfunction lamp, does not function in accordance with the ABS inspection procedure.

Manufacture Date	Trailer with Air Brakes (Including a Trailer Converter Dolly)
Before March 1, 1998	An ABS is not required.
On or after March 1, 1998	<p>Connected to a truck or truck tractor manufactured before March 1, 1997.</p> <p>Apply the brake pedal and confirm that the trailer-mounted ABS malfunction lamp turns on and after a few seconds goes out before the brake is released. Any other response indicates a malfunction of the ABS.</p> <p>Connected to a truck or truck tractor manufactured on or after March 1, 1997. **</p>

Manufacture Date	Trailer with Air Brakes (Including a Trailer Converter Dolly)
	Begin with the ignition key in the “off” position. Turn the ignition key to the “on” position. Confirm that the trailer-mounted ABS malfunction lamp turns on and after a few seconds goes out. Any other response indicates a malfunction of the ABS.
On or after March 1, 2001	<p>Connected to a truck or truck tractor manufactured before March 1, 2001.</p> <p>Test in the same manner as trailers manufactured on or after March 1, 1998.</p> <p>Connected to a truck or truck tractor manufactured on or after March 1, 2001.</p> <p>Begin with the ignition key in the “off” position. Turn the ignition key to the “on” position. Confirm that both the trailer dash-mounted ABS malfunction lamp and the trailer-mounted ABS malfunction lamp turn on and after a few seconds go out. Any other response indicates a malfunction of the ABS.</p>
<p>The trailer ABS lamp in the dash only operates when the tractor is connected to a trailer manufactured after March 1, 2001.</p> <p>** Power to the trailer’s ABS circuit is delivered by a dedicated circuit from the truck tractor.</p>	

In the U.S., the following vehicles are exempt from the requirements to have an ABS:

1. Any trailer that has a width of more than 102.36 inches with extendable equipment in the fully retracted position and that is equipped with two short track axles in a line across the width of the trailer.
2. Any vehicle equipped with an axle that has a GAWR of 29,000 pounds or more.
3. Any trailer that has a GVWR of more than 120,000 pounds and whose body conforms to that described in the definition of heavy hauler trailer set forth in S4 of the Federal Motor Carrier Safety Administration regulations—*heavy hauler trailer* means a trailer that has one or more of the following characteristics, but that is not a container chassis trailer:
 - Its brake lines are designed to adapt to separation or extension of the vehicle frame, or
 - Its body consists only of a platform whose primary cargo-carrying surface is not more than 40 inches above the ground in an unloaded condition, except that

it may include sides that are designed to be easily removable and a permanent "front end structure," as that term is used in §393.106 of the Federal Motor Carrier Safety Administration regulations.

4. Any trailer that has an unloaded vehicle weight that is not less than 95 percent of its GVWR.
5. Any load divider dolly.

FRAME

Basic Frame Components

- **Two frame rails:** The frame rails are the foundation of the vehicle.
- **Cross members:** Cross members hold the frame rails the proper distance apart and control rotational and longitudinal motion. They provide protection and support for wires and airlines that cross the vehicle from one side to the other.
- **Sliding subframe:** Both full-frame and short-frame trailers may have a sliding subframe. This allows the axles to be moved in relation to the trailer. (Also called sliding tandem axles.)

Procedure: Examine frame.

Reject vehicle if:

1. The frame is cracked, loose, sagging, or broken.
2. There are broken or loose bolts or brackets.
3. There are cracked or loose frame members.

Procedure: Examine adjustable axle.

Reject vehicle if:

1. Adjustable axle assembly (sliding subframe) with any locking pins missing or will not engage.
2. Locking bar not locked into the locked position.

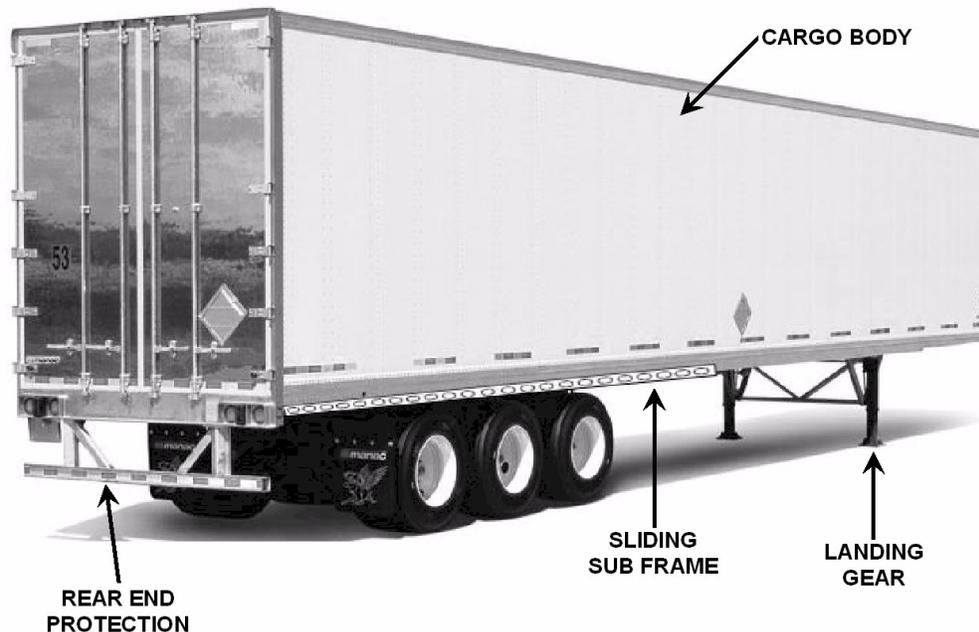
Procedure: Examine rear end protection.

Reject vehicle if:

1. The bottom of the device is more than 30 inches from the ground with the vehicle loaded.
2. There is more than 24 inches between the devices if more than one is used.

3. The maximum transverse distance from the widest part of the vehicle at the rear to the device is more than 18 inches.
4. The device is more than 24 inches forward of the rear-most part of the vehicle.
5. The device is not made of a substantial material or is not securely fastened.

SLIDING SUBFRAME AND REAR END PROTECTION



SAFETY DEVICES

FIRE EXTINGUISHER - TRAILER COACHES ONLY

Procedure:

1. Inspect only trailer coaches to ensure that the fire extinguisher is present, is in good usable condition, and is easily accessible.
2. If the extinguisher is a CO₂ type, it must be not less than 5-pound capacity, and if it is a dry chemical type, it must be not less than 2 1/2-pound capacity.

Reject vehicle if:

1. The fire extinguisher is not present or is not of an approved type.
2. The fire extinguisher is not in usable condition.
3. The fire extinguisher is not easily accessible.

SCHOOL BUS

SCHOOL BUS

BODY INTERIOR

Procedure: Visually and physically inspect the entrance door, handrail, stepwell, driver's seat, aisle, floor, passenger seats, barriers, and panels.

1. Visually inspect and operate the entrance door, ensuring that it properly opens and closes without any obstruction of movement. Inspect a manually operated door to make sure the door will maintain an open and closed position. The door must not have any locking device except for interlock systems. On power-operated entrance doors, the emergency release valve, switch, or device to release the entrance door must be placed above or to the immediate left or immediate right of the entrance door, and it must be clearly labeled.
2. The handrail must be securely mounted, and all OEM hardware must be present. Perform the NHTSA *Nut and String Test*, as described and illustrated below.



The Handrail Inspection Tool and Procedure: Nut and String Test

Note: The inspection tool is inexpensive, and the procedure for detecting potentially fatal handrail designs is quite simple. The inspection tool is a standard $\frac{1}{2}$ inch hex nut measuring $\frac{3}{4}$ inch across the flats. This nut is tied to $\frac{1}{8}$ inch thick cotton cord measuring 36 inches in length with overhand knots. The drawstring should have a minimum length of 30 inches when tied to the nut and attached so that a pull of at least 10 pounds does not separate the nut from or break the drawstring.

Steps to conduct a handrail inspection are:

- A. Stand on the ground outside of the bus;
- B. Drop the inspection tool between the handrail and step well wall, simulating the typical way students exit the bus;
- C. Draw the inspection tool through the handrail in a smooth, continuous slow motion; and
- D. Repeat this procedure several times (minimum of three times).

Note: It is important to drop the inspection tool over the handrail in such a way as to simulate a child exiting the bus. This is a drop-and-drag test. Do not create a snagging situation by placing the nut in an area that would not be exposed to a drawstring or other articles.

Inspection Results

Take the bus out of service and repair it if the inspection tool catches or snags anywhere on the handrail. If the nut separates from the drawstring or the drawstring breaks, reassemble the tool and retest. If the inspection tool pulls freely without catching or snagging, the bus should not be rejected.

3. Visually inspect the stepwell for the condition of the support structure to ensure structural stability. Inspect the stepwell treads to ensure proper securing and adhesion to the stepwell. Visually inspect the step treads for any excessive worn areas that may pose a tripping or slip hazard.
4. Visually inspect the driver's seat to ensure that it is securely fastened to the vehicle.
5. Visually inspect the driver's seat for its ability to maintain the adjusted position. Inspect the driver's restraining device (seat belt) for fraying, attaching hardware, and its capacity to maintain the driver in the seated position.
6. Visually inspect the aisles to ensure that all aisles, including the aisle (or passageway between seats) leading to the emergency door, are a minimum of 12 inches wide.
7. Visually inspect the aisles to ensure that there are no obstructions or loose items in an aisle that would prevent passengers from accessing emergency exits.
8. On school buses with a side emergency door, check that aisle space from the center aisle to the side of the emergency door is 12 inches by measuring between the vertical line of the seat back and the face of the next seat cushion or bottom of a flip seat.
9. Visually inspect floor covering, aisle, and cove molding strips for condition and adhesion. Check fastening holes for cracks, and check the condition of the rubber in aisles to ensure that there are no unsealed holes or cracks through the underside of the bus and that there is no damage to the coverings that could cause a trip or slip hazard.
10. Visually inspect all interior sidewall, rear, ceiling, and driver's area paneling for secure fastening, projections, or sharp edges and for general condition.
11. Visually inspect all seats and barriers to ensure that all are securely mounted and not loose or broken.
12. All seats must be forward facing and securely fastened to the bus body. Passenger seat cushions must be fastened to prevent the cushions from disengaging from the seat frames in the event of an accident. There must be a minimum space of 24 inches between the forward surface of a seat back and the rear surface of the seat or barrier ahead measured across the seat cushion without depressing any surface. The forward surface may have side bolsters that briefly reduce the width to less than 24 inches, provided that the remainder of the seat measures at least 24 inches.
13. Seats and barriers should appear symmetrical. Seats/barriers that do not appear symmetrical should be physically inspected to ensure that the seat covering and/or padding is not significantly compromised and that it complies with FMVSS 571.222.

14. On buses equipped with flip-up seats, inspect them to ensure that the seat cushion rises to a vertical position automatically when not occupied.

Reject vehicle if:

1. The student entrance door does not open or close properly.
2. The door control handle does not lock in the closed position.
3. The handrail is loose or missing.
4. The handrail fails the nut/drawstring test, as defined by the NHTSA.
5. Any part of the step well tread is loose, torn, or damaged in a way that would present a tripping hazard.
6. The driver seat is not securely fastened to the vehicle and/or fails to maintain adjusted position (393.93).
7. Any part of the driver's safety restraint assembly is missing, not properly installed or defective as to prevent proper securement of occupant [393.93(a)(b)] (571.209).
8. Any aisle does not have the required clearance (571.217).
9. The floor not maintained to prevent slipping or tripping by passengers.
10. Any seat or barrier is not securely attached to the vehicle (393.91).
11. Any seat or barrier material is present that compromises the integrity of compartmentalization and occupant protection (571.222).
12. Seat spacing fails to comply with 571.222.

Advise customer if:

1. The door is equipped with a padlock or similar locking device (excludes interlock systems).
2. Any part of the step well or support structure is damaged.
3. Obstructions or loose items in aisles that could prevent passengers from accessing emergency exits (393.62) (393.203).

EMERGENCY EQUIPMENT

Procedure: Visually inspect all emergency equipment (first aid kit, biohazard kit, fire extinguisher, emergency reflectors/triangles)

1. Visually inspect that the fire extinguisher is readily accessible to the driver and passengers, that it is fully charged and is of proper type and size (2A:10BC), that it is properly secured, and that it has a working pressure gauge.
2. Visually inspect any other state-required equipment, such as first aid kits (meeting or exceeding the recommendation in the National School Bus Specifications and Procedures Manual at the date of purchase), body fluid kits, webbing cutters, and emergency reflectors, and ensure that these items are fully stocked, functional, and properly secured.

Reject vehicle if:

1. The fire extinguisher is missing, not fully charged, or is not readily accessible to the driver or passengers (393.95), ([23 VSA §1281](#)).

Advise customer if:

1. The fire extinguisher is not of proper type or size, has no pressure gauge, or is not secured (393.95), ([23 VSA§1281](#)).
2. Any additional state-specific equipment (e.g., first aid kit, body fluid kit, webbing cutter, emergency reflectors, etc.) fails to meet state specifications ([23 VSA§1281](#)).
3. Emergency reflectors/triangles are missing (571.125).

EMERGENCY EXITS

Procedure: Visually and physically inspect all emergency exits.

1. Operate all emergency exits. Exits must open freely and completely.
2. Door prop rods must operate freely and hold the door or exit in open position without obstructing the exit.
3. There must be no padlocks or any other locking devices on exits, except interlocking systems.
4. Visually inspect all exits to ensure that they are clearly labeled and marked on both the inside and outside of the bus.
5. Ensure that all exits have an audible device to alert the driver of an open exit door or window.

Note: FMVSS 571.217 specifies the number of exits for each type of bus.

Reject vehicle if:

1. Any emergency door, window, or roof hatch fails to open freely or completely, as defined in 571.217.
2. Any door prop-rod device is missing or inoperative (571.217).
3. Any emergency exit is equipped with a padlock or similar locking device, excluding interlock systems.
4. It lacks the required number of emergency exits (571.217).
5. Any item or modification reduces the size of the opening and limits access to the emergency exit by all passengers.

Advise customer if:

1. Any emergency exit is not properly labeled and marked both inside and outside the vehicle, as specified by 571.217.
2. The emergency exit warning device is not audible in the driver's seating position and/or the vicinity of the emergency door or window (571.217).

DRIVER'S COMPARTMENT**Procedure: Inspect windshield wipers, windshield washer, defroster, defogger, horn, dashboard gauges and warning lamps, heat, interior lights, and backup alarm (required on all buses manufactured as of September 1, 2011).**

1. Operate the wiper and washer system. The wiper system should be power driven, with at least two speeds, and it should be able to clean the area of the windshield within the wiping pattern. Wipers should operate with a minimum of 45 cycles per minute.
2. Operate the defrosting and defogging system to clear the driver's windshield (571.103).
3. Inspect that the horn functions and is audible from approximately 200 feet away.
4. Check the dashboard gauges and warning lights
5. Check the heat for proper operation.
6. Check the dashboard gauges and warning lights.
7. Check to ensure backup alarm sounds when the vehicle is operated in reverse.

Reject vehicle if:

1. The windshield wiper and/or washer are not working.
2. The defrosting/defogging system is inoperable.
3. The horn fails to function as designed (393.81).

Advise customer if:

1. The dashboard gauges or lights are inoperable.
2. The backup alarm is inoperable.

LAMPS/SIGNALS**Procedure: Visually check that all lamps are in working condition.**

1. Visually inspect all lamps, such as brakes, turn signals, tail, head (low beam), overhead warning lights (amber and red), hazard-warning, and stop arm lights, to ensure proper visibility and operation. Turn signals should flash at a rate of 60 to 120 times per minute.
2. Inspect that the horn functions and is audible from approximately 200 feet away.
3. Inspect the crossing control device, if equipped, for proper operation (i.e., that it extends and retracts as designed).

Reject vehicle if:

1. Any one of the following lamps is not working: brake, turn signal, tail, head (low beam), school bus overhead warning light (amber or red), hazard-warning, or stop arm lamp (571.108, 571.131), ([23 VSA §1283](#)).

Note: The vehicle's LED lamps must have more than 25 percent of the diodes unlit to be considered not working.

2. Any required stop arm fails to operate with overhead red lights, as mandated (571.131).

Advise customer if:

1. Any critical brake, telltale lamp, buzzer, or gauge fails to function as designed.
2. A crossing control device, if equipped, fails to extend and retract as designed.

BODY EXTERIOR**Procedure: Inspect the body exterior, including color, windows, mirrors, bumpers, doors, chassis, frame, unibody, cross members, outriggers, and body supports.**

1. Visually check to ensure that the entire bus is painted National School Bus Glossy Yellow.

Note: The hood and fenders may be lusterless black, and the roof may be white.

2. Visually inspect the body exterior to ensure that there is not any panel, rub rail, or trim that is loose, torn, dislocated, or protruding from the surface of the bus in a way that would create a hazard.
3. Visually inspect that all engine, battery, or other doors are securely mounted and properly installed.
4. Visually inspect all mirrors to identify any mirror that is damaged, clouded, or otherwise has an obscured area. All mirrors should hold a set adjustment. All mirrors should be directed to view the intended area for which they are designed.
5. Visually inspect all windows for cracks.
6. Visually inspect the windshield for cracks, chips, discoloration, or other damage in that portion extending upward from the height of the topmost portion of the steering wheel, not including a 2-inch border at the top and a 1-inch border at each of the windshield or each of its panels.
7. Visually inspect front and rear bumpers for missing or broken attaching hardware. Ensure that bumpers are properly mounted and secure and that there is no point protruding beyond the confines of the vehicle that would create a hazard.
8. Visually inspect the frame for cracks; loose attaching hardware; and sagging, broken, or unapproved welds to the frame side rail or flange.

Note: Inspect for any crack 1 1/2 inches or longer in the frame side rail web that is directed toward the bottom flange or any crack extending from the frame side rail web around the radius and into the bottom flange.

9. Visually and physically inspect body hold-down components for damage that would permit the shifting of the body.
10. Inspect frame members for cracked, loose, bent, broken, or unapproved welds that affect the support of functional components (e.g., steering gear, engine, transmission, body parts, suspension, etc.). Welding to the frame should be performed only by the manufacturer or its designee.
11. Visually and physically inspect all crossmembers, attaching hardware, and other structural supports for cracks or deformations. Visually inspect for three or more adjacent cross members that are missing, broken, damaged, or loose.

12. Inspect any area of the floor that is sagging, weak, or damaged due to broken, damaged, or loose cross members.
13. Visually inspect all outriggers and attaching hardware for cracks, missing bolts, and damage.
14. Visually inspect the mud flaps on the rear to ensure that they are present, are secure, and cover the full width of the tread to prevent the throwing of dirt, water, stones, or other material onto the windshield of following vehicles.

Reject vehicle if:

1. Any panel, rub rail, or trim is loose, torn, dislocated, or protruding from the surface of the bus, creating a hazard (393.203).
2. Any mirror required to provide the driver with the entire field of view is missing, damaged, clouded, or otherwise obscured so as to place children in a hazardous position (571.111), ([23 VSA §1283](#)).
3. Any glass or glazing is broken through or missing (393.60).
4. The front bumper is missing or not properly secured (393.203[e]).
5. The rear bumper is missing or not secured (393.86).
6. There is any cracked, loose, sagging, or broken frame side rail. (393.201[a]).
7. Any damage permits the shifting of the body or may result in the imminent collapse of the frame (393.201[a]).
8. Any cracked, loose, or broken frame member that affects the support of functional components (e.g., steering gear, engine, transmission, body part, suspension, etc.) (393.201[a]).
9. Any cross member, outrigger, or other structural support is cracked, missing, deformed, or has rust holes that affect the structural integrity or safe operation of the vehicle (393.201).
10. Mud flaps are missing, loose, damaged, or worn to the point they are incapable of meeting the standard noted in procedure item “M,” above. (23 VSA §1306).

Advise customer if:

1. The vehicle is an improper color ([23 VSA §1283](#)).
2. Any panel, rub rail, or trim is loose, torn, or dislocated, but not hazardous.
3. Any engine, battery, or other door is not properly secured (393.203).
4. The rear of the bus body is not marked with strips of retroreflective national school bus yellow (NSBY) material or does not use a material that conforms with the requirements of FMVSS No. 131, *School Bus Pedestrian Safety Devices*, Table 1, to outline the perimeter of the back

of the bus. The perimeter marking of rear emergency exits per FMVSS No. 217, *Bus Emergency Exits and Window Retention and Release*, and/or the use of retroreflective “SCHOOL BUS” signs partially accomplishes the objective of this requirement. To complete the perimeter marking of the back of the bus, strips of retroreflective NSBY material, a minimum of 1 inch and a maximum of 2 inches wide, must be applied horizontally above the rear windows and above the rear bumper, extending from the rear emergency exit perimeter, marking outward to the left and right rear corners of the bus. Vertical strips must be applied at the corners, connecting these horizontal strips. Multifunction school activity buses (MFSABs) are exempt from these color requirements.

5. Any front or rear SCHOOL BUS sign, if not a lighted design, is not marked with retroreflective NSBY material composing the background for lettering and/or if lettering is not at least 8 inches high ([23 VSA §1283](#)).
6. The sides of the bus body are not marked with at least 1 3/4-inch retroreflective NSBY material, extending the length of the bus body and located vertically between the floor line and the beltline.
7. Any crossover mirror system or portion thereof fails to hold a set adjustment, any crossover mirrors are directed to view any area other than for which they were intended, or any part of the required field of vision is obscured or not visible from the driver’s seated position.
8. Any glass is not of an approved type (393.60[a]).
9. The windshield has discoloration or other damage in that portion extending upward from the height of the topmost portion of the steering wheel, not including a 2-inch border at the top and a 1-inch border at each side of the windshield or each of its panels, except as follows:
 - a. Color or tint applied by the manufacturer for the reduction of glare
 - b. Any crack not over 1/4 inch long, if not intersected by any other crack
 - c. Any damaged area that can be covered by a disc 3/4 inch in diameter, if not closer than 3 inches to any other such damaged area
 - d. Any driver’s side area window has chips, clouding, or cracks that obscure the driver’s vision (393.60[c]).
10. There is any crack 1 1/2 inches or longer in the frame side rail web that is directed toward bottom flange or there is any crack extending from the frame side rail web around the radius and into the bottom flange (393.201[a]).
11. Three or more adjacent crossmembers are broken or detached or any area of the floor is sagging or soft due to broken crossmembers (393.201).
12. Mud flaps are damaged or worn but are still capable of meeting the standard described in item “M,” above (23 VSA §1306).

ELECTRICAL/BATTERY**Battery Procedure:**

1. Visually and physically inspect that the battery(ies) is (are) securely mounted and that there are no signs of leaking or excessive corrosion.
2. Crank the engine to ensure that the battery has adequate capacity to start the engine.

Cables Procedure:

1. Visually inspect all electrical cabling and wiring for chafed, frayed, damaged, or burned insulation.
2. Visually and physically inspect for corroded or loose connections at the battery terminals. Inspect for unsuitable insulation to electrical cabling.
3. Visually and physically inspect for missing or damaged protective grommets insulating all electrical cables through metal compartment panels. All electrical cabling passing through a metal surface must pass through an insulated grommet to provide adequate protection against chaffing and shorting.
4. Visually and physically inspect for any broken or unsecured mounting of electrical components.
5. Visually and physically inspect electrical cabling for securement and routing and inspect for any unsecured wiring that may cause chafing or frayed conditions.

Reject vehicle if:

1. Any battery is not secured (393.30).
2. There are signs of leaking or excessive corrosion.
3. Any electrical cable insulation is chafed, frayed, damaged, compromised, or burned, causing bare cable to be exposed (393.28, 396.3[a][1]);
4. Any mounting for electrical components is broken or unsecured (396.3[a][1]).

Advise customer if:

1. The battery lacks the cranking capacity to start the engine.
2. There are loose or corroded connections at battery posts or compromised insulation protection to electrical components (393.28, 393.77[b], 396.3[a][1]).

3. There are missing or damaged protective grommets insulating main electrical cables through metal compartment panels (393.30).
4. Any electrical cable is unsupported, hanging, or missing clamps, resulting in circumstances that may cause chafing or frayed conditions (393.28, 396.3[a][1]).

TIRES, WHEELS, AND RIMS

Procedure: Inspect Wheels and Rims.

1. Visually and physically inspect all nuts, bolts, studs, lugs, and holes for damage. Visually inspect for broken, damaged, missing, or loose fasteners. Rust around fasteners or on the rim surface is sometimes an indication of cracked or loose mounting hardware.
2. Visually inspect rims for cracks, welds, or broken components. Visually inspect for any lock or slide ring that is broken, cracked, improperly seated, sprung, or has mismatched rings.

Reject vehicle if:

1. Any nuts, bolts, studs, lugs, or holes are elongated, broken, missing, damaged, or loose (393.205[b]).
2. There is any cracked or broken wheel or rim (393.205[a]).
3. Any lock or slide ring is broken, cracked, improperly seated, sprung, or has mismatched rings (393.205[a]).

Procedure: Inspect tire tread, type, inflation, and sidewalls.

1. Visually inspect that tires are properly inflated and do not have noticeable leaks. (See 393.76 [h][1],[2].) **Note:** The inspector must use a tire pressure gauge to verify pressure, if questionable.
2. Visually inspect valve stems for damage and presence of the valve cap.
3. Visually inspect tire sidewalls for cuts, wear, and any observable bumps or bulges.
4. Visually inspect for any front tire worn to less than 4/32 inch.
5. Visually inspect for any rear tire worn to less than 2/32 inch.
6. If a visual inspection cannot determine that the tire meets the minimum depth requirement, the inspector must use a commercial tire depth gauge to verify tread depth.
7. Visually inspect the steer axle (front) to ensure that no recapped, regrooved tires are present.

8. Visually inspect tires for improper wear patterns.
9. Check to ensure proper tire type (e.g., restricted use, load range, size, mismatched on axle).

Reject vehicle if:

1. Any front tire is worn to less than 4/32 inch (393.75[b]).
2. Any rear tire is worn to less than 2/32 inch (393.75[c]).
3. Any tire is flat or has a noticeable leak (393.75[a][3]).
4. Any sidewall is cut, worn, or damaged to the extent that the steel or fabric cord is exposed (393.75[a]).
5. There is any observable bump, bulge, or knot related to sidewall or tread separation (393.75[a]).

Advise customer if:

1. Any school bus is being operated with regrooved, recapped, or retreaded tires on the front axle (393.75[d]).
2. Any tire is not of the proper type (e.g., load range, size, mismatched on axle).
3. Any tire is underinflated or overinflated.

ENGINE**Procedure: Visually and physically inspect engine components for wear, looseness, damage, improper installation, or fluid leaks.**

1. Visually inspect the engine and surrounding components for evidence of fluid leaks and loose or damaged components. Start the engine. While the engine is operating, visually and audibly monitor the engine for proper operation, leaks, and unusual noises of the engine or its components.
2. Visually inspect the cooling fan per the manufacturer's recommendations.
3. Visually and physically inspect all drive belts for proper alignment and tension per the manufacturer's recommendations. All belts must be free of cracking, frays, fluid, glazing, and excessive wear. Inspect the belt-tensioner per the manufacturer's recommendations.
4. Visually inspect all hydraulic, coolant, fuel, and pneumatic hoses for damage, proper routing, proper type, and proper securement. Hoses must be routed to avoid contact with the exhaust

system, rotating or moving engine components, or sharp edges. Hoses must not be cracked, leaking, swollen, or chaffed.

Reject vehicle if:

1. Any critical component fails to function as designed (396.3).
2. There is any fluid leak that would affect the safe operation of the vehicle.

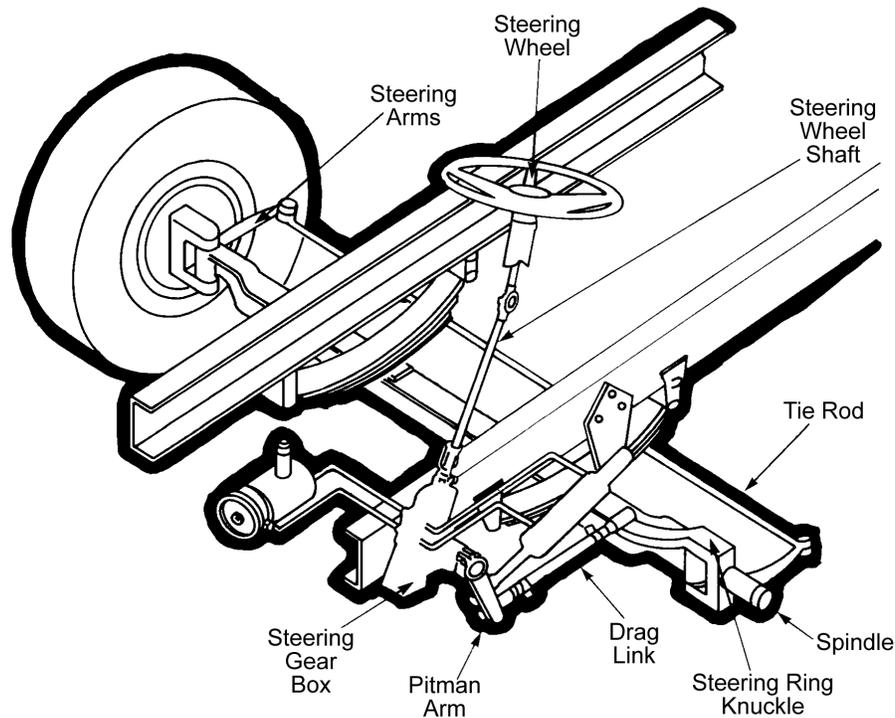
Advise customer if:

1. Any noncritical component fails to function.

There is any fluid leak that does not affect the safe operation of the vehicle.

STEERING ALIGNMENT

Procedure: Inspect ball and socket joints, front axle beam, hoses/fluids, nuts, pitman arm, power steering, steering wheel/column, steering gear box, tie rods/drag links, king pin, wheel bearing assemblies, and a frame on type a buses.



Procedure: Inspect ball and socket joints.

1. With the bus on the ground, examine the ball joint nut stud for movement while the steering wheel is being rocked back and forth. Examine the ball and socket joint for weld repairs.
2. Check for lateral and vertical movement by grasping the tie rod and drag link sockets and attempting to laterally and vertically move the ball joint (rotational movement will not be considered). Any motion other than rotational, greater than 1/8 inch, that can be detected by movement with two hands with moderate strength in any connecting joint is a defect.

Reject vehicle if:

1. Any nut stud moves under a steering load (396.3[a][1]).
2. There is any motion, other than rotational, between any linkage member and its attachment point of more than 1/8 inch measured with hand pressure only (393.209[d]).
3. There is any obvious welded repair (393.209[d]).

Procedure: Inspect front axle beam.

1. Visually examine the front axle beam for any obvious bend or twist, any cracks, or any welded repair.

Reject vehicle if:

1. There is any crack or obvious welded repair (396.3[a][1]).

Procedure: Visually examine all tie rods, pitman arm, steering gear box, drag link, steering arm, and tie rod arm for looseness and missing fasteners.**Reject vehicle if:**

1. There are loose or missing fasteners on the tie rod, pitman arm, drag link, steering arm, or tie rod arm (396.3[a][1]).
2. The pitman arm is loose on the steering gear output shaft (393.209[d]).
3. There is any obvious welded repair (396.3[a][1]) (393.209[d]).

Procedure: Examine power steering.

1. Manually manipulate the auxiliary power-assist cylinder to check for looseness. Start the bus and rotate the steering wheel back and forth to ensure that the power steering pump is operable.
2. With the engine stopped, inspect the system drive belt(s) for any fraying, cracks, or fluid saturation. Check belt tension. On units equipped with an automatic tensioner, ensure that the tensioner moves freely.
3. Inspect the fluid reservoir/hoses while at operating temperature to ensure that the fluid level is not below the add mark. Inspect for signs of fluid leakage.

Reject vehicle if:

1. The auxiliary power-assist cylinder is loose (393.209[e]).
2. Any power steering system belts are frayed, cracked, or slipping (393.209[2][e]).
3. The power steering system is leaking or if there is insufficient fluid in the reservoir (393.209[2][e]).

Procedure: Examine steering.

1. Visually inspect for any modification or other condition that interferes with the free movement of any steering component. Turn the steering wheel through a full right and left turn, and feel for binding or jamming conditions. Both front wheels must be capable of being turned to full right or full left without binding or interference.

2. Inspect turn stops by observing for shiny spots and/or signs of wear due to contact with other vehicle components on the sides of tires, drag links, pitman arm, shock absorbers, and brake lines.

Reject vehicle if:

1. Any modification or condition interferes with the free movement of any steering component (393.209[d]).
2. Steering travel is restricted through the limit of travel in either direction (570.60[c]).

Procedure: Examine steering column/wheel.

1. Inspect the steering column for any looseness in bolts, clamps, positioning parts, or universal joints. Inspect the flexible coupling in the steering column (if the vehicle is so equipped) for excessive misalignment and tightness of the clamp bolt or nut.
2. The steering column and components must also be inspected for damage, cracks, or welded repairs. Inspect the steering wheel to ensure that it is properly positioned and secured.
3. Place steering axle wheels in a straight-ahead position and have an assistant turn the steering wheel until movement is observed at the left road wheel. Measure the steering wheel movement from starting position to wheel movement position. Compare this measurement to the applicable listing in Table 2: Steering Wheel Free Play, below.

Table 2: Steering Wheel Free Play

Steering Wheel Free Play: Steering wheel free play must not exceed the requirements listed in the following chart:

Steering Wheel Diameter	Manual System Movement 30	Power System Movement 45
16 inches (41 cm)	2 inches (5.1 cm)	4 ½ inches (11.5 cm)
18 inches (46 cm)	2 ¼ inches (5.4 cm)	4 ¾ inches (12 cm)
20 inches (51 cm)	2 ½ inches (6.4 cm)	5 ¼ inches (13.5 cm)
22 inches (56 cm)	2 ¾ inches (7 cm)	5 ¾ inches (14.5 cm)

Reject vehicle if:

1. Any U-bolts or other positioning parts are absent or loose (393.209[c]).
2. Any universal joints are welded or repaired (393.209[d]).
3. The steering wheel is not properly secured (393.209[a]).

4. Steering wheel lash/free play exceeds the requirements in Table 2 (393.209[b]).

Procedure: Examine steering gear box.

1. Visually examine the steering gear box for any loose, damaged, or missing mounting bolts. Inspect for cracks in the gear box, mounting brackets, or any obvious welded repairs.
2. While having an assistant rock the steering wheel back and forth, visually inspect the steering shaft and gear box for any looseness where the steering gear box is mounted to the frame. Visually inspect the steering shaft coupler for cracks, damage, or looseness.
3. With the engine operating, inspect for excessive fluid and/or oil leakage (observable movement of fluid).

Reject vehicle if:

1. Any mounting bolt is loose or missing (393.209[d]).
2. There are any cracks in the gearbox or mounting brackets (393.209[d]) (396.3[a][1]).
3. There are any obvious welded repairs (396.3[a][1]) (393.209[d]).
4. There is looseness of the yoke coupling to the steering gear input shaft (393.209[d]).

Procedure: Examine tie rods/drag links.

1. While having an assistant rock the steering wheel back and forth, visually inspect the tie rod ends, crossbar, and drag links for any looseness at the steering linkage pivot points.
2. Check for lateral and vertical movement by grasping the tie rod and drag link sockets and attempting to laterally and vertically move the ball joint (rotational movement will not be considered). Any motion, other than rotational, greater than 1/8 inch, that can be detected by movement with two hands with moderate strength in any connecting joint is a defect.
3. Check the crossbar for structural damage and the crossbar clamps for secure mounting.

Reject vehicle if:

1. There are any loose clamps or clamp bolts on the tie rod or drag link(s) (396.3[a][1]).
2. There is looseness in any threaded joint (396.3[a][1]).

Procedure: Examine king pin and wheel bearing assemblies.

1. Visually inspect the king pin and wheel bearing assemblies for looseness, damage, and missing or loose fasteners, including locking pins, draw keys, caps, and bearings.
2. Physically inspect the king pin and bearing assemblies for play. With the tire raised off the ground, grasp the tire at its top and attempt to move the wheel assembly in and out. If

movement is present, the inspector can help to identify the source through the following procedure:

Have an assistant fully apply the brakes while rechecking play. If movement disappears with brakes applied, then the play is in the wheel bearings. If movement remains, it is most likely in the king pin area. The assembly must not have king pin play that exceeds .250 inch measured at the outside edge of the tire or have wheel bearing movement that exceeds .010 inch measured at the bearing hub.

3. Visually inspect A-frames and bushings on Type A vehicles. Inspect bushings for wear, cracking, splitting, or severe extrusion from suspension parts.
4. For vehicles equipped with “wet hubs” or oil bath hubs, the inspector should visually check the site glass for lubricant level.

Reject vehicle if:

1. Wheel bearing or king pin play exceeds ¼ inch (393.70) (570.61).
2. Any bearing (hub) cap, plug, or filler plug is missing or broken, allowing an open view into the hub assembly (396.3[a][1]).
3. There is smoking from the wheel hub assembly due to bearing failure (396.3[a][1]).
4. Any wheel seal is leaking. This must include evidence of contamination of the brake friction material (396.5[b]).

Note: Grease/oil on the brake lining edge, back of shoe, or drum edge and an oil stain with no evidence of fresh oil leakage are not conditions for an out-of-service violation.

5. Lubricant is leaking from the bearing hub and is accompanied by evidence that further leakage will occur (396.5[b]).
6. No visible or measurable lubricant shows in the bearing hub (396.5[a]).

SUSPENSION COMPONENTS

Procedure: Inspect all components of the suspension.

1. Visually and physically inspect all front and rear axle components. Inspect all U-bolts and other suspension connections to axle mounting hardware for cracks, breaks, looseness, or improper type.
2. Inspect axle, axle housing, spring hanger(s), shackles, or other axle components for alignment, cracks, breaks, and loose or missing items that could result in the axle shifting from its normal position.

3. Inspect the front axle beam for signs of improper repair (e.g., welding or heating).
4. Inspect for any worn (beyond manufacturer specifications) or improperly assembled U-bolt, shock, king pin, ball joint, strut, air spring, or positioning components.
5. Inspect all leaf spring hangers, hanger assemblies, or portions of leaf for broken, separated, sagging, bent, abnormally worn (beyond manufacturer specifications), shifted, or missing components.
6. Inspect pins and bushings for wear, off-center spring eyes, rubbing shackles, or asymmetric joints. Inspect for any broken, weak, or damaged coil springs and mounting assemblies.
7. Visually and physically inspect all hydraulic shock absorbers for leaks, looseness, damage, or missing components.
8. Inspect air suspension (if equipped). Observe that the vehicle is lifting level. With the air system fully charged, inspect for any audible or visual air leakage at the air spring assembly, supply hoses, and connections.

Caution: Use caution whenever underneath the vehicle. There may not be sufficient room underneath the vehicle should a problem occur with the air suspension system.

Reject vehicle if:

1. Air suspension is deflated (one or more deflated air spring/bag) (393.207[f]).
2. Any air spring/bag is missing, broken, or detached at either the top or bottom (393.207[f]).
3. Any U-bolt or other spring to axle clamp bolt is cracked, broken, loose, or missing (393.207[a]).
4. Any axle, axle housing, spring hanger, or other axle positioning part is cracked, broken, loose, or missing, resulting in an axle shifting from its normal position (393.207[a]).
5. There is any worn (beyond manufacturer specifications) or improperly assembled U-bolt, shock, king pin, ball joint, strut, air bag, or positioning component (570.61[a]).
6. Any spring hanger, assembly part, or portion of leaf is broken, separated, or missing (393.207[c]).
7. There is any broken coil spring (393.207[d]).

Advise customer if:

1. There is any crack 1½ inches or longer in the frame side rail web that is directed toward the bottom flange (393.201[a]).
2. There is any broken coil spring (393.207[d]).

3. Any area of the floor is sagging or soft due to broken crossmembers (393.201).

BRAKE SYSTEMS

Procedure: Inspect air system.

1. With full system air pressure, depress the brake pedal and inspect each wheel end brake to determine if effective braking forces are applied. There should be no audible air loss at supply lines, fittings, valves, or brake chambers.
2. With full system pressure, make a single full service brake application with the parking brake and ignition off. Note the gauges and listen for air leaks. Release the service brake.
3. If an air leak is detected at any point in the inspection process, the inspector should check the vehicle's air loss rate through the following procedures:
 - a. Set the engine at idle and release the brakes.
 - b. Reduce air pressure in the reservoir to 80 psi.
 - c. Make a full brake application with the governor cut in.
 - d. Check the air pressure gauge after the initial application for air loss. Air pressure should be maintained or increase. A drop in pressure indicates a serious air leak in the brake system.

Reject vehicle if:

1. Braking action is ineffective upon the application of service brakes (393.48 [a]).
2. There is an audible air leak at a chamber (e.g., ruptured diaphragm, loose chamber clamp, etc.) (386.3[a][1]);
3. An air leak is discovered and either the primary or secondary reservoir pressure is not maintained when the following conditions exist (396.3[a][1]):
 - Governor is cut in.
 - Reservoir pressure is between 80 and 90 psi.
 - Engine is at idle.
 - Service brakes are either fully applied or released.

Advise customer if:

1. The ABS malfunction indicator light is not functioning as designed or is illuminated on all ABS-required vehicles.

Procedure: Examine air brakes measurement.

Note: The following procedure is based on the applied stroke method for measuring the movement of the brake chamber push rod:

1. Release the spring brakes and visually check each brake to ensure that it is in the normal released position.
2. With the brakes released, make a mark where the pushrod exits the brake chamber.
3. With the engine off, make a series of brake applications to reduce the reservoir pressure to between 90 and 100 psi.
4. Apply and hold a full brake application (90 to 100 psi).
5. Measure the distance between the mark and the face of the brake chamber. The difference between measurements is called the chamber applied stroke.

Note: Any brake that is beyond the re-adjustment limit will require repairs and/or adjustment. (See [Appendix C, Table 1](#): Brake Adjustment Specifications.)

Reject vehicle if:

1. Any one brake is beyond the adjustment limit.

(See [Appendix C, Table 1](#): Brake Adjustment Specifications.)

Procedure: Visually inspect all brake chambers to ensure that they are properly marked, in good operating condition, have no visible damage, and are properly matched. Chambers must be matched by size, type, and stroke.

Reject vehicle if:

1. Chamber size is mismatched on an axle (393.47[b]).
2. There is a mismatched brake chamber long stroke versus regular stroke (393.47[b]).
3. Slack adjuster length is mismatched (393.47[c]).

Procedure: Examine brake shoes, pads, linings.

1. Visually inspect all brake linings, shoes, and pads. Linings may be checked through inspection slots. All shoes, pads, and linings must comply with the applicable standards.

The brake lining/pad thickness must not be less than 3/16 inch at the shoe center for a shoe with a continuous strip of lining, less than 1/4 inch at the shoe center for a shoe with two pads, or worn to the wear indicator if the lining is so marked for air drum brakes.

2. The brake lining/pad thickness must not be less than 1/8 inch for air disc brakes or 1/16 inch or less for hydraulic disc brakes.

3. Visually inspect the brake lining/pad to ensure that it is firmly attached to the shoe, is not cracked or broken, and that the friction surface is not saturated with oil, grease, or brake fluid.
4. Visually inspect all brake component mounting hardware for any loose, cracked, broken, or missing items. This inspection should be performed with the brakes released and with the brakes applied. It may be necessary to remove inspection access covers and brake dust covers or, in some instances, to pull wheels and drums to accomplish the inspection.

Reject vehicle if:

1. There is any lining thickness less than allowed by 393.47.
2. Any lining pad is cracked, broken, not firmly attached, or missing (393.47). (Surface or heat cracks in the lining should not be considered out of service.)
3. The friction surface of the drum, rotor, or friction material is contaminated by oil, grease, or brake fluid (393.47).
4. There is a loose or missing component (e.g., chambers, spiders, support brackets) (393.47).
5. The brake pad fails to make contact with drum/rotor (e.g., frozen, binding, uneven) (393.48[a]).
6. Braking action on any axle is absent (e.g., failing to move upon application of a wedge, S-cam, cam, or disc brake).
7. A rotor or drum has evidence of metal-to-metal contact on the friction surface (393.47[d][1]).
8. A brake pad, lining, or shoe is missing (393.47[a]).

Procedure: Examine drums/rotors. Visually inspect all brake drums/rotors for any external cracks that open when brakes are applied (do not confuse short hairline internal check cracks with flexural cracks) and for any portion of the drum/rotor that is missing or in danger of falling away.

Note: It may be necessary to remove inspection access covers and brake dust covers or, in some instances, to pull wheels and drums to accomplish the inspection.

Reject vehicle if:

1. There are any external cracks that open upon application (393.47[a]).
2. Any portion of the drum or rotor (discs) is missing, broken, misplaced, or cracked through the rotor to the center vent (393.47[a]).

Procedure: Visually inspect all system hoses, lines, and tubing for any audible leak (if air) or visible leak (if hydraulic); any bulging or swelling when the system is pressurized; any hose, line, or tubing that is cracked, broken, or crimped in a way that would restrict flow; any hose

that is chafed through its outer cover to the fabric layer or any line/tubing, and for proper securement and support.

Reject vehicle if:

1. A brake hose has any damage extending through the outer reinforcement ply (393.45[a]).
2. There is an audible leak somewhere other than a proper fitting or connection (393.45[a]).
3. There is any bulge or swelling when brakes are applied (393.45[a]).
4. There is any restriction due to a cracked, broken, or crimped line/hose (393.45[a]).
5. Any line, tubing, hose, or connection is not constructed to meet the standard (571.106).

Procedure: Examine hydraulic brake measurement.

1. With the brake pedal in the full upright position, measure the distance between the brake pedal and the floor or firewall. With the engine running, make a single firm brake application, measure the distance between the brake pedal and the floor or firewall must a second time, and record the difference.
2. With the vehicle stopped and engine running, depress brake pedal. The system must be able to maintain brake pedal height under moderate foot force (40 to 60 pounds) for 1 minute without pumping. With the vehicle in a stopped position and the brake pedal depressed under moderate foot force (40 to 60 pounds) there should be a minimum of 1/3 of the total available pedal travel (manufacturer's specification) remaining on nonpowered systems.

Reject vehicle if:

1. There is no pedal reserve with the engine running (393.40[b]).

Procedure: Examine hydraulic brake system.

1. With the engine off, turn the ignition switch to the "on" position and check the instrument panel for visible and audible warning signals to indicate a system malfunction. If the bus is equipped with vacuum assist, it must have a visible warning signal and gauge to indicate any loss of vacuum. Audible signals must be loud enough to be heard over engine noise.
2. Visually inspect the master cylinder to determine if it is below the minimum fill requirements, leaking, loose, or improperly mounted.
3. Visually inspect the hydraulic fluid reservoir level in the master cylinder unit. Inspect for any fluid leaks on wheel cylinders/calipers, master cylinders, hose connections, and hydrovac on buses using vacuum-assisted brakes. Check for brake fluid around the brake booster between the booster and firewall.

Reject vehicle if:

1. The system brake failure light or low fluid light is on or inoperative (393.51).
2. The reservoir is below minimum level (393.45[a]) (571.106).
3. Any hoses seep, leak, or swell under pressure (393.45[a]).
4. Any leak is present in the master cylinder unit (393.45[a]) (571.106).
5. There is any observable fluid leak in the brake system.
6. The brake failure warning system is missing, inoperative, disconnected, defective, or activated while the engine is running, with or without brake application (393.51[b]).

Advise customer if:

1. For ABS-required vehicles, the ABS malfunction indicator light is not functioning as designed or is illuminated.

Procedure: Examine parking brake.

1. With the engine operating and the parking brakes set, place the transmission in both forward and reverse gears to determine if the brakes will hold the vehicle stationary.
2. Visually and physically check the condition of the parking brake system and the parking brake warning light.

Reject vehicle if:

1. The parking brake fails to hold the vehicle in a stationary position on normal roadway conditions (absence of ice or snow) in forward or reverse (393.41) (571.105 S5.2.1 and S5.2.3[b]).

Advise customer if:

1. The parking brake warning lamp fails to function as designed.

Procedure: Examine power-assist unit.

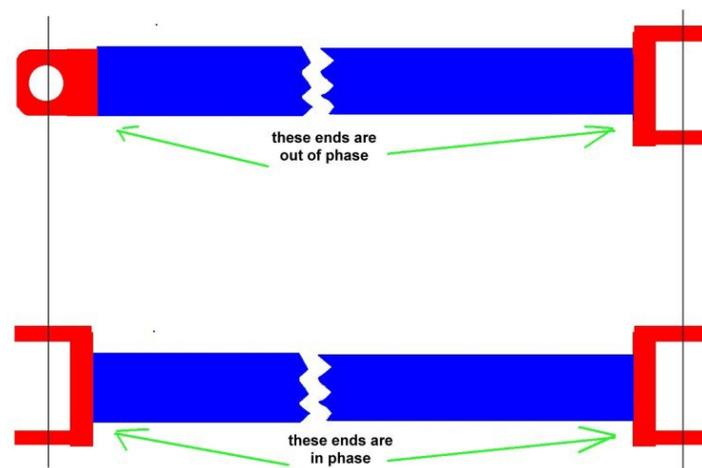
1. For electric/hydraulic assist, with the engine off, depress the brake pedal. The electric/hydraulic brake assist motor must operate.
2. For hydrovac assist, with the engine off, pump the brakes to exhaust all reserve. Hold firm pressure on the brake pedal and start the engine. The pedal should fall slightly. The failure of the pedal to fall slightly indicates a malfunction of the power-assist unit.
3. For hydro-boost, after two or three brake applications with the engine off, start the vehicle while maintaining pressure on the brake pedal. The pedal should push briefly, then fall as the power assist engages.

Reject vehicle if:

1. The power-assist unit fails to operate (396.3[a][1]).

DRIVESHAFT/DIFFERENTIAL**Procedure: Visually and physically inspect each segment of the drive shaft and the differential.**

1. Visually inspect the differential and differential housing for cracks and leaks. Careful attention must be paid to the areas of mounting attaching hardware and wheel end areas. The housing vent must be inspected to ensure that it is not clogged and is functional by twisting the vent cap by hand.
2. Visually and physically inspect each segment of the drive shaft and associated hardware. Inspect for bends, cracks, missing weights, or debris entangled in the shaft. Each shaft more than 18 inches long must be equipped with a suitable guard to prevent an accident or injury if it fractures or disconnects. Check to ensure that the driveshaft guards are not loose, bent, or missing.
3. Visually and physically inspect each universal joint and center bearing. Universal joints and center bearings must not be loose or worn and must have all attaching hardware securely fastened. Check for lateral and vertical movement of the universal joints and center bearing by grasping the universal joint and attempting to move the joint laterally and vertically. Inspect universal joints for substandard or welded repairs.
4. Visually inspect the driveshaft for proper phasing. (See illustration.)



Reject vehicle if:

1. The driveshaft guard is loose, missing, improperly placed, or bent (393.89).
2. Any driveshaft universal joint is worn or faulty or exhibits an obvious welded repair (393.209[2][d]).
3. The differential has a cracked or leaking housing (393.207[a]).

Advise customer if:

1. One or more driveshafts are out of phase.

EXHAUST SYSTEM

Procedure: Visually and audibly inspect the entire exhaust system (muffler, diesel particulate filter, diesel oxidation catalyst, heat shields, mounting hardware, and other system components)

1. Visually and audibly inspect the complete exhaust system to ensure that exhaust is not discharging directly below the driver or passenger compartment. All exhaust emission control devices must be installed and operating per the manufacturer's recommendations.
2. Inspect for the presence and condition of heat shielding over and around all piping and components where specified by the vehicle manufacturer.
3. Visually and physically inspect all exhaust system mounting hardware for loose, missing, or damaged components and ensure that it is securely attached. Inspect to ensure that all clamps are in place and secure.
4. Visually inspect the exhaust system for indications of, and areas likely to result in, burning, charring, or damaging of the electrical wiring, the fuel supply, or any combustible part of the vehicle.

Reject vehicle if:

1. The exhaust system is leaking or discharging directly below or at a point forward of the driver or passenger compartment (393.83[g]).

Note: Does not apply to proper venting for emission systems.

2. Any part of the exhaust system is located where it is likely to result in burning, charring, or damaging of the electrical wiring, the fuel supply, or any combustible part of the vehicle (393.83[a]).

FUEL SYSTEM

Procedure: Inspect all parts of the fuel system (fuel tank, fuel tank cage, fuel lines, hoses, filters, fill cap, fittings).

1. Visually inspect all parts of the fuel system for indications of damage or leaks.
2. Visually and physically inspect fuel lines and hoses for proper securement and routing and for missing or loose clamps that may cause chafing or come in contact with electrical components.

Reject vehicle if:

(CNG or LPG Fuels)

1. Any fuel leakage from the CNG or LPG system is detected audibly or by smell and is verified by either a bubble test using non-ammonia, noncorrosive soap solution or a flammable gas detection meter (396.3[a][1]).

Note: Verification is needed to ensure that the sound is not either internal to the fuel system (such as gas flowing in a pressure regulator or pressure equalizing between manifold tanks) or a leak in the air brake system.

2. Any fuel leakage from the CNG or LPG system is detected visibly (via evidence such as ice buildup at fuel system connections and fittings) and is verified by either a bubble test using non-ammonia, noncorrosive soap solution or a flammable gas detection meter (396.3[a][1]).

Note: Some brief fuel leakage or decompression may occur during refueling, causing temporary frosting of CNG or LPG fuel system parts. If the vehicle has been refueled shortly before inspection, care must be taken to distinguish these temporary frosting occurrences from actual leaks.

(Liquid Fuels)

1. Any part of the fuel tank or fuel system is not securely attached to the vehicle (393.65).
2. Any component of the fuel system has a dripping leak at any point (393.67 Tank), (396.3[a][1]).
3. The fuel cap is missing or the system does not seal as designed.

WHEELCHAIR LIFT-EQUIPPED VEHICLES

Procedure: Visually and manually inspect the wheelchair lift for proper operation and possible hazards.

1. Visually inspect and operate the wheelchair lift to ensure it functions as designed. Inspect for any leaks that would hinder the operation of the lift.

2. Inspect all safety systems of the wheelchair lift (e.g., hand rails, ramp stops, etc.) and ensure that they are functioning as designed and in compliance with FMVSS 403 and 404.
3. Ensure that all pinch points are protected from seated passengers.
4. Visually inspect all wheelchair and occupant securement devices to ensure that none are missing or broken and that straps are not frayed.
5. Inspect that all components for each wheelchair position conform to the manufacturer's specifications.
6. Visually and physically inspect all anchorage points, tracking, and fasteners for securement.

Reject vehicle if:

1. The wheelchair lift does not function as designed or is inoperable.
2. A platform lift manufactured after April 1, 2005, does not have all the following components (as referenced in FMVSS 403 and 404):
 - a. Jacking prevention
 - b. Manual backup operating mode
 - c. Interlocks to prevent forward or rearward mobility of the vehicle unless lift is stowed and lift doors are closed
 - d. Wheelchair retention device
 - e. Platform outer barrier, inner roll stop, and threshold warning device

3. Any hydraulic line leaks during lift operation.
4. The wheelchair restraint system is missing, incomplete or improperly installed, loose, damaged, or does not adhere to the securement manufacturer's recommendations.
5. Any required wheelchair occupant restraint system is not in compliance (571.222).

APPENDIX A

ADMINISTRATIVE PENALTY AND DURATION OF SUSPENSION					
CATEGORY 1 VIOLATION					
TYPE OF VIOLATION		DURATION OF SUSPENSION			
		1 st Violation	2 nd Violation	3 rd Violation	4 th & Subsq Violation
a.	Furnishing, giving, selling, or attaching a certificate of inspection without a complete inspection of the vehicle.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation
b.	Fraudulent recording of information on any and all inspection records, including certificate of inspection, use of another mechanics credentials, all required AVIP tablet entries, and data entry required to complete the VIR.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation
c.	Performing or diagnosing unnecessary repairs for the purpose of inspection.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation
d.	Inspecting a vehicle at an unlicensed location.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation
e.	Performing a road test on a public highway on an unregistered vehicle and/or a vehicle that is not properly insured.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation
f.	Failure of the replacement sticker agent to properly replace and affix the certificate of inspection as required.	\$300	\$400 & 30-day suspension	\$500 & 6-month suspension	Revocation

- **Note:** The determination of second and subsequent violations is made based on previous violations.

ADMINISTRATIVE PENALTY AND DURATION OF SUSPENSION					
CATEGORY 2 VIOLATION					
TYPE OF VIOLATION		DURATION OF SUSPENSION			
		1 st Violation	2 nd Violation	3 rd Violation	4 th & Subsq Violation
a.	Inspecting a vehicle not owned by and registered to the fleet inspection station.	\$120	\$220	\$300 & 30-day suspension	Revocation
b.	Inspection and test drive performed by an uncertified mechanic. Uncertified mechanics may only conduct inspections in their first 30 days of employment.	\$120	\$220	\$300 & 30-day suspension	Revocation
c.	Inspecting a vehicle without a rear registration plate or validation sticker.	\$120	\$220	\$300 & 30-day suspension	Revocation
d.	Failing to verify the VIN and registration information with the vehicle.	\$120	\$220	\$300 & 30-day suspension	Revocation
e.	Performing a faulty or incomplete inspection; inspecting a vehicle with inoperable, illegal, or defective equipment.	\$120	\$220	\$300 & 30-day suspension	Revocation
f.	Inspecting a vehicle in a facility without the required tools, equipment, space, or any of the requirements of the provisions for designation.	\$120	\$220	\$300 & 30-day suspension	Revocation
g.	Inspecting a vehicle that was taken on a road test by a mechanic with a suspended operator's license.	\$120	\$220	\$300 & 30-day suspension	Revocation
h.	Failing to return all Department materials to the DMV immediately upon revocation, suspension, cancelation, or discontinuance of business.	\$120	\$220	\$300 & 30-day suspension	Revocation
i.	Failing to comply with any of the provisions for inspection station designation.	\$120.00	\$220	\$300.00 & 30-day suspension	Revocation

- **Note:** The determination of second and subsequent violations is made based on previous violations.

ADMINISTRATIVE PENALTY AND DURATION OF SUSPENSION					
CATEGORY 3 VIOLATION					
TYPE OF VIOLATION		DURATION OF SUSPENSION			
		1 st Violation	2 nd Violation	3 rd Violation	4 th & Subsq Violation
a.	Failing to produce related work orders and invoices to the DMV or agent on request.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
b.	Failing to record a vehicle inspection on AVIP when accepting payment for inspection services.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
c.	Failing to assign the correct expiration/date month on certificate of inspection.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
d.	Failing to conspicuously display the inspection station's license, hourly rate, or flat fee rate.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
e.	Failing to notify the DMV immediately, in writing, of changes of ownership, name, or location of an official inspection station.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
f.	Failing to report to the DMV within 2 business days of the loss or theft of a certificate of inspection.	\$65	\$120	\$200 & 30-day suspension	6-month suspension
g.	Failing to immediately notify the DMV upon the <u>temporary or permanent</u> closing of the inspection station <u>or a change of business hours</u> .	\$65	\$120	\$200 & 30-day suspension	6-month suspension

- **Note:** The determination of second and subsequent violations is made based on previous violations.

ADMINISTRATIVE PENALTY AND DURATION OF SUSPENSION					
CATEGORY 4 VIOLATION					
TYPE OF VIOLATION		DURATION OF SUSPENSION			
		1 st Violation	2 nd Violation	3 rd Violation	4 th & Subsq Violation
a.	Failing to affix a certificate of inspection to the correct vehicle.	\$25	\$30	\$65	3-month suspension
b.	Loaning certificates of inspection to or borrowing certificates of inspection from another inspection station.	\$25	\$30	\$65	3-month suspension
c.	Failing to return unused inspection stickers before the end of February following the use of the next year's stickers.	\$25	\$30	\$65	3-month suspension

- **Note:** The determination of second and subsequent violations is made based on previous violations.

ADMINISTRATIVE PENALTY AND DURATION OF SUSPENSION					
CATEGORY 5 VIOLATION					
TYPE OF VIOLATION		DURATION OF SUSPENSION			
		1 st Violation	2 nd Violation	3 rd Violation	4 th & Subsq Violation
a.	Illegibly recording information on certificate of inspection.	Warning	\$10	\$25	30-day suspension
b.	Failure of a 2 nd certified mechanic to sign AVIP VIR when the primary certified inspection mechanic's operator's license is under suspension, when he or she does not hold a valid class or endorsement on his or her driver's license; or when he or she holds a provisional inspection license.	Warning	\$10	\$25	30-day suspension

- **Note:** The determination of second and subsequent violations is made based on previous violations.

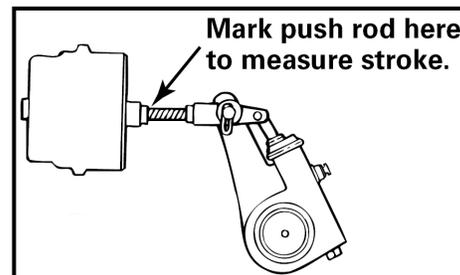
APPENDIX B

MEASURING PUSH ROD TRAVEL

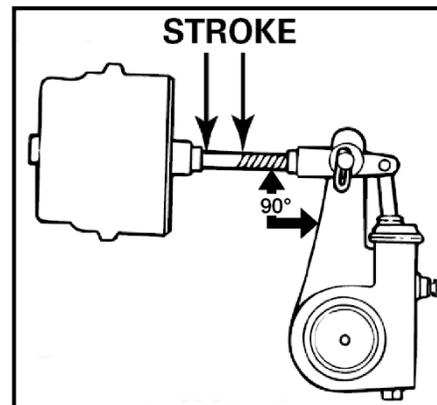
Caution: Faulty brake chambers may explode, especially upon brake application. Always maintain a safe distance from chambers, and never position yourself behind the chamber when the driver applies the brakes.

Procedure:

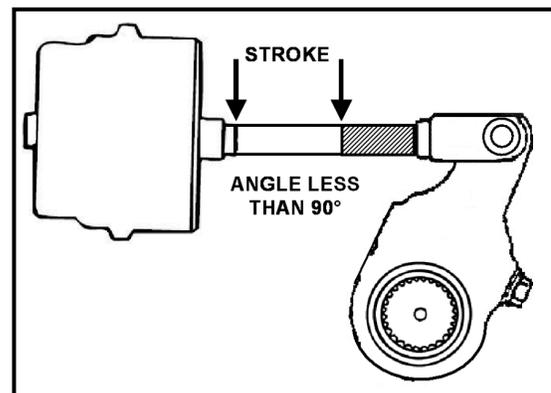
1. With the brakes released, mark the push rod at a point where the push rod exits the brake chamber



2. While the brakes are applied, measure the distance of push rod travel (the stroke) from the brake chamber to the mark. A 90-degree slack/rod angle applies maximum braking force.

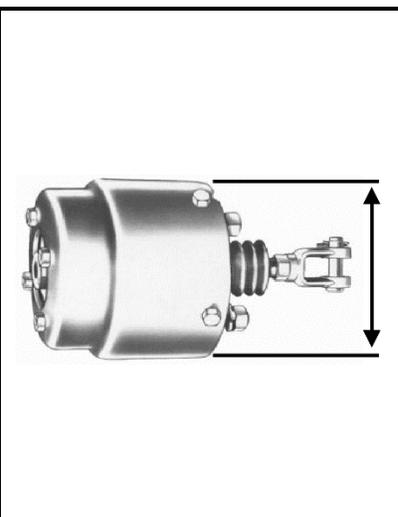


3. When the slack/rod angle goes to the point where the angle is less than 90 degrees:
 - a. Braking force diminishes.
 - b. The push rod may bottom out.
 - c. The brake may need adjustment.



4. Push rod travel must be measured from a fully released position to a fully applied position. Approximately 90 psi of air pressure is required to fully release all the brakes.
5. The type and size of a brake chamber determines the allowable push rod travel specification. Larger chambers result in more allowable push rod travel.
6. Often, the type of brake chamber is marked on the chamber itself. If not, you must measure the diameter to determine the type. To do this, measure from the outside of the clamp, not just the diameter of the chamber. Use the tables below to check the size and type of brake chamber against the distance of the push rod travel.

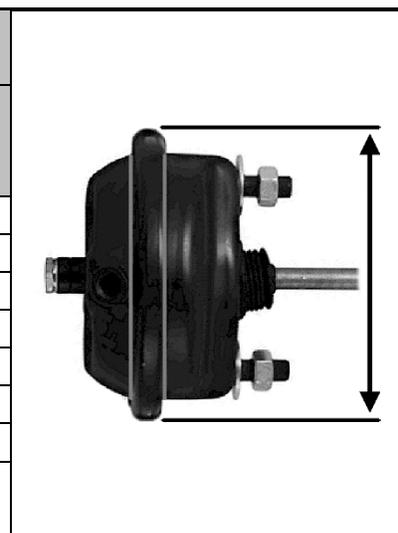
ROTOCHAMBER TYPE (Diameter in Inches)			
Type	Effective Area (Square Inches)	Outside diameter	Maximum stroke at which brakes should be readjusted
9	9 sq. in.	4 9/32 in.	1 1/2 in.
12	12 sq. in.	4 13/16 in.	1 1/2 in.
16	16 sq. in.	5 13/32 in.	1 7/8 in.
20	20 sq. in.	5 15/16 in.	1 7/8 in.
24	24 sq. in.	6 13/32 in.	1 7/8 in.
30	30 sq. in.	7 1/16 in.	2 1/4 in.
36	36 sq. in.	7 5/8 in.	2 5/8 in.
50	50 sq. in.	8 7/8 in.	3 in.



The diagram shows a side view of a cylindrical Rotochamber brake chamber. A vertical double-headed arrow on the right side indicates the measurement of the outside diameter, which is taken from the outer edge of the clamp on the right side of the chamber.

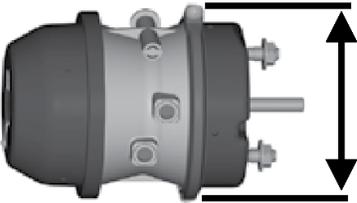
"STANDARD" CLAMP-TYPE BRAKE CHAMBER DATA			
Type	Outside Diameter	Rated Stroke	Maximum stroke at which brakes must be readjusted
9	5 1/4 in.	1.75 in.	1 3/8 in.
12	5 11/16 in.	1.75 in.	1 3/8 in.
16	6 3/8 in.	2.25 in.	1 3/4 in.
20	6 25/32 in.	2.25 in.	1 3/4 in.
24	7 7/32 in.	2.25 in.	1 3/4 in.
30	8 3/32 in.	2.50 in.	2 in.
36*	9 in.	3.00 in.	2 1/4 in.

***Note:** If type 36 chamber is used, slack length should be less than 6 inches.



The diagram shows a side view of a Standard Clamp-Type Brake Chamber. A vertical double-headed arrow on the right side indicates the measurement of the outside diameter, which is taken from the outer edge of the clamp on the right side of the chamber.

"LONG STROKE" CLAMP-TYPE BRAKE CHAMBER DATA			
Type	Outside Diameter	Rated Stroke	Maximum stroke at which brakes must be readjusted
16	6 3/8 in.	2.50 in.	2 in.
20	6 25/32 in.	2.50 in.	2 in.
24	7 7/32 in.	2.50 in.	2 in.
24*	7 7/32 in.	3.00 in.	2 1/2 in.
30*	8 3/32 in.	3.00 in.	2 1/2 in.
*Note: Identified by square air port bosses.			



- **Note:** Automatic brake slack adjusters are required on air brake-equipped vehicles manufactured on and after October 20, 1994. Replacing or re-adjusting a self-adjusting brake adjuster that exceeds the maximum push rod stroke does not guarantee that the defect is corrected. There may be defects in other components of the foundation brake system.

APPENDIX C

Brake Adjustment Specifications

Brake adjustment: Must be less than those specifications contained herein relating to “Brake Adjustment Limit.” (Dimensions are in inches.)

Clamp-Type Chamber Data		
Type	Outside Diameter	Brake Adjustment Limit
6	4 ¹ / ₂	1.25
9	5 ¹ / ₄	1.375
12	5 ¹¹ / ₁₆	1.375
16	6 ³ / ₈	1.75
20	6 ²⁵ / ₃₂	1.75
24	7 ⁷ / ₃₂	1.75
30	8 ³ / ₃₂	2
36	9	2.25

“Long Stroke” Clamp-Type Brake Chamber Data		
Type	Outside Diameter	Brake Adjustment Limit
12	5 ¹¹ / ₁₆	1.75
16	6 ³ / ₈	2.0
20 (2 ½-inch rated stroke)	6 ²⁵ / ₃₂	2.0
20 (3-inch rated stroke)	6 ²⁵ / ₃₂	2.5
24 (2 ½-inch rated stroke)	7 ⁷ / ₃₂	2.0
24 (3-inch rated stroke)	7 ⁷ / ₃₂	2.5
30	8 ³ / ₃₂	2.5

DD-3 Brake Chamber Data		
Type	Outside Diameter	Brake Adjustment Limit
30	8 ¹ / ₈	2.25
Note: This chamber has three air lines and is found on motorcoaches.		

Wedge Brake Data
The combined movement of both brake shoe lining scribe marks must not exceed 1/8 inch (3.18 mm).