



# **Commercial Passenger Vehicle Inspection Manual**

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## Purpose

This manual is used by the Michigan Department of Transportation (MDOT) to inspect for-hire commercial passenger vehicles authorized under Public Act 432 of 1982, as amended, known as the Motor Bus Transportation Act.

This manual may be modified at any time to conform to Title 49 Code of Federal Regulations (CFR) or other safety related items.

All defects or deficiencies found during the inspection shall be repaired to meet or exceed original equipment manufacturer (OEM) design, standards and specifications.

This inspection shall serve as an interstate carrier's annual inspection as detailed in [Title 49 CFR 396.17 - Periodic Inspection](#).

For each vehicle registered under PA 432, MDOT inspectors will complete an annual state vehicle inspection. A Level V, Commercial Vehicle Safety Alliance inspection (CVSA) for vehicles with a gross vehicle weight rating (GVWR) of 10,001 pounds or greater will also be completed. CVSA inspections will not be performed or recorded for an inspection taking place due to the vehicle failing its initial inspection. Carriers will be provided copies of these reports. Copies of these reports must be kept by the company, as well as maintained in the inspected vehicle for review upon demand of an authorized federal, state or local official.

An online version of this manual can be found at [Michigan.gov/BusAndLimo](http://Michigan.gov/BusAndLimo).

### MDOT Vehicle Safety Inspectors

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## Vehicle and Carrier Documents

Verify registration and regulatory documents for accuracy:

- a. Carrier information matches the Bus and Limo Regulatory Information System (BLRIS).
- b. Vehicle identification number (VIN) is accurate to the vehicle and documents.

Match the vehicle registration with the VIN plate. Reject if:

- a. VIN plate is missing, defaced or not securely fastened.
- b. VIN is not in agreement with the registration or manufacturer's statement of origin.

## Drivers Compartment

### Driver's Seat and Seat Belts ([CFR 393.93](#))

Reject if:

- a. Seat is loose or will not hold adjustments.
- b. Seat belts are missing or damaged.

### Driver Controls ([CFR 393.209](#))

Reject if:

- a. Steering wheel is loose or binds.
- b. Steering wheel has a spoke cracked through or missing.
- c. Steering wheel lash exceeds the following parameters:

<b>Steering wheel diameter</b>	<b>Manual steering system</b>	<b>Power steering system</b>
16 inches or less (406 mm or less)	2 inches (51 mm)	4 1/4 inches (108 mm)
18 inches (457 mm)	2 1/4 inches (57 mm)	4 3/4 inches (121 mm)
19 inches (483 mm)	2 3/8 inches (60 mm)	5 inches (127 mm)
20 inches (508 mm)	2 1/2 inches (64 mm)	5 1/4 inches (133 mm)
21 inches (533 mm)	2 5/8 inches (67 mm)	5 1/2 inches (140 mm)
22 inches (559 mm)	2 3/4 inches (70 mm)	5 3/4 inches (146 mm)

- d. Steering column is not securely fastened.
- e. Parking brake does not comply with [CFR 393.41 - Parking Brake System](#).
- f. Telescopic steering column does not lock into position.
- g. Tilt steering column does not lock in at least one position.
- h. Power steering Power steering will not turn wheels through its full range of motion with standard OEM effort (lock to lock) while vehicle is motionless and idling.
- i. Horn does not operate properly ([CFR 393.81 - Horn](#)).

**Accelerator, Clutch and Brake Pedal ([CFR 396.3\(a\)\(1\)](#))**

Reject if:

- a. Pedals stick, bind or fail to return.
- b. Power booster for hydraulic brake system fails to operate (pump brake pedal to deplete power assist supply and start engine with foot on brake pedal checking for power boost operation).
- c. Power steering pump hydraulic brake assist fails to operate as designed.
- d. Electric motor brake booster fails to activate when key is in off position or as designed.

**Windshield ([CFR 393.60\(c\)](#))**

Reject if:

- a. Glass is other than approved safety glass.
- b. Any non-transparent material obstructs or impairs driver's clear view of highway or any intersecting highway.
- c. Stone chips larger than a 25-cent piece are present within the wiper sweep area.
- d. Cracks extend above the height of the steering wheel or are more than 2 inches from the top or 1 inch from a side.
- e. Any windshield defect that could damage a windshield wiper blade.
- f. Any accessories are located more than 4 inches from the top of the wiper sweep area.

## **Windshield Wipers and Washer Operation ([CFR 393.78](#))**

Reject if:

- a. Windshield wipers do not operate.
- b. Wiper blades are torn, smear or streak the windshield.
- c. Wipers do not clear the windshield of washer fluid after five strokes.
- d. Washers do not operate.

## **Mirrors ([CFR 393.80](#))**

Reject if:

- a. There is not one at each side to allow the driver a clear vision of the highway.
- b. The glass is fogged, cracked or missing.
- c. Missing a convex-type mirror on the right side.

## **Heaters ([CFR 393.77](#)) and Windshield Defrosting and Defogging Systems ([CFR 393.79](#))**

Reject if:

- a. Defroster and blower do not work as designed.
- b. Heater cores are leaking coolant.
- c. Heaters do not operate properly.

## **Brake Warning Devices and Gauges**

### **Hydraulic Brakes ([CFR 393.55](#))**

Reject if:

- a. A warning signal (audible or visible) fails to operate before or upon application of the brakes.
- b. Inoperative antilock brake system on any vehicle built after March 1, 1999, unless equipped when manufactured at an earlier date.

### **Air Brakes ([CFR 393.55\(c\)\(2\)](#))**

Reject if:

- a. A warning signal (audible and visible) fails to operate continuously whenever the pressure of the compressed air is below a specified pressure, which must be at least one-half of the compressor governor cutout pressure.
- b. The pressure gauge indicating the pounds per square inch (psi) or kilopascals (kPa) available for braking is missing, inoperative or inaccurate.
- c. Antilock brakes are inoperative on any commercial vehicle built after March 1,

1998, unless equipped when manufactured at an earlier date.

### **Hydraulic Brakes Applied or Assisted By Air or Vacuum ([CFR 393.51](#))**

Reject if:

- a. A warning signal (audible or visible) fails to operate continuously whenever the pressure or vacuum does not meet the requirements listed above.

## **Emergency Equipment**

### **Fire Extinguisher ([CFR 393.95\(a\)](#))**

Reject if:

- a. Is not fully charged.
- b. Not securely mounted in a location readily accessible.
- c. Is not of the required size or class (one 5 B:C or two 4 B:C extinguishers).
- d. Not marked or labeled with its Underwriters Laboratories rating.

### **Reflective Triangles ([CFR 393.95\(f\)](#))**

Reject if:

- a. If there are not at least three operable reflectors.
- b. Not protected by enclosure in a box, rack or other container specially designed and constructed for immediate use.
- c. They are not of the specified type.

## **Passenger Compartment**

### **Lighting ([CFR 393.11](#))**

Reject if:

- a. Step lights do not operate or bulb protection lens (or lenses) is missing.
- b. Aisle or underseat lighting does not operate, if so equipped.
- c. Restroom low intensity light is inoperative.
- d. Restroom emergency indicator inoperative, if so equipped.

### **Flooring ([CFR 393.84](#))**

Reject if:

- a. Floor damage allowing road debris or exhaust to enter interior compartment.
- b. Any carpet or molding that could cause a trip hazard.

- c. Oil or grease accumulation on a traction surface.
- d. Flooring or step structure will not sufficiently support weight.

### **Seating ([CFR 393.91](#))**

Reject if:

- a. Torn upholstery exposing sharp metal or springs.
- b. Seating is not securely attached.
- c. Adjustment mechanisms are not operating properly.

### **Emergency Exits ([CFR 393.62](#))**

Reject if:

- a. Location or operation decals are missing or defaced.
- b. Emergency exit will not operate properly.
- c. Emergency exit will not stay shut.
- d. Any of the OEM's exits on factory stock vehicles are removed or obstructions are present that would interfere with escape. (Note: If a vehicle with forward-facing seats is converted to perimeter seating, the emergency exit locations may be altered if the vehicle continues to meet the requirements of Federal Motor Vehicle Safety Standards).
- e. Minimum required emergency exits are not met based on passenger compartment seat count. Passenger and driver must be added to the emergency exit seat count when an aisleway is present to the driver compartment.
- f. Emergency exit does not meet minimum size requirement of 13 inches by 20 inches.
- g. Guidance document: [Emergency exit requirements](#)

### **Windows ([CFR 393.60](#))**

Reject if:

- a. Separated, cracked or shattered glass is exposed to passengers.
- b. Window tinting exceeds specifications defined under the Michigan Vehicle Code.
- c. Glazing is other than a specified type.

### **Interior Miscellaneous ([CFR 393.3](#))**

Reject if:

- a. Loose ceiling or side panels are present.
- b. Sharp moldings or other parts are present.
- c. Loose interior accessories are present (television monitors, glasses, lamps, etc.).

### **Standee Line ([CFR 393.90](#)) (if layout allows standees)**

Reject if:

- a. Line is not present or not in a contrasting color.
- b. Warning information sign is missing or defaced.

### **Doors ([CFR 396.3\(a\) \(1\)](#))**

Reject if:

- a. Missing or unable to stay closed.
- b. Cannot operate properly.

## **Exterior**

### **Marking of Motor Vehicles ([CFR 390.21](#))**

Reject if:

- a. The legal or trade name is missing from either side of the vehicle.
- b. The USDOT number is missing from either side of the vehicle and is designed to carry more than eight passengers or is more than 10,001 pounds.
- c. Letters/numbers are not contrasting sharply in color with background. Not legible during daylight hours from 50 feet.

### **Lighting ([CFR 393.11](#))**

Reject if:

- a. Any fail to operate, are dim or lack the proper color lens:
  - Headlamps, high and low beams.
  - Turn signal lamps.
  - Identification and clearance lamps for vehicles more than 80 inches wide.
  - One back up lamp.
  - License plate lamp.
  - Tail lamps.
  - Side marker lamps.
  - Center marker lamps if more than 30 feet in length (does not have to operate with turn signals).
  - Hazard warning flashing lamps.
  - Stop lamps including third brake lamp, if equipped.

## **Reflectors ([CFR 393.11](#))**

Reject if:

- a. Missing or lack the proper color:
  - Rear.
  - Front side.
  - Rear side.
  - Center (if more than 30 feet in length).
  - Not marked with letters SAE or DOT.

## **Tires ([CFR 393.75](#))**

Reject if:

- a. Non-steering axle tire with less than 2/32 of an inch of tread at any point on a major groove.
- b. Steering axle tire with less than 4/32 of an inch of tread at any point on a major tread groove.
- c. Any part of ply, belt or cord is exposed.
- d. There is any bump, bulge or separation.
- e. Tire is marked "not for highway use" or any similar designation.
- f. Any other conditions or markings believed to render the tire as unsafe.
- g. Front tire is retreaded, recapped or re-grooved.
- h. Any tire has been re-grooved or recut below original tread design depth, except tires that are identified as having extra under tread rubber.
- i. Tires used on the same axle are not the same size or type of construction.
- j. Tire is flat or has an audible leak.
- k. Any tire carries a greater weight than is specified on the tire.
- l. Any tire is not properly inflated.

## **Wheels and Attachments ([CFR 393.205](#))**

Reject if:

- a. Wheels or rims are cracked or broken.
- b. Stud or bolt holes are elongated.
- c. Nuts or bolts are missing or loose.
- d. No visible or measurable amount of lubricant showing in the hub.
- e. Any wheel carries a greater weight than is specified on the wheel.

## **Fuel Tank Filler and Cap ([CFR 393.65](#) - [CFR 393.69](#))**

Reject if:

- a. Cap is not present.
- b. Cap does not fit or the seal is missing or damaged.

- c. Fill pipe opening is located inside passenger or cargo compartment.
- d. Fuel can spill onto the exhaust or electrical systems.

### **Battery Compartment ([CFR 393.30](#))**

Reject if:

- a. Positive terminal not covered.
- b. Battery cables are loose, worn or frayed.
- c. Accessory feeds and wiring are not overload protected.
- d. Battery is cracked or leaking.
- e. Battery not protected from terminal shorting out by excess movement (hold downs).
- f. Unsuitable insulated protection to electrical components ([CFR 393.28 - Wiring Systems](#)).

### **Engine Compartment ([CFR 396.3](#))**

Reject if:

- a. Oil, fuel or coolant lines or hoses are leaking or damaged.
- b. Drive belts are cracked, frayed, oil soaked or damaged.
- c. Power steering system leaks ([CFR 393.209\(e\)](#)).
- d. Throttle will not return properly or springs are missing and worn.
- e. Motor mounts are broken or worn to allow excessive movement.
- f. Master cylinder fluid level is less than three-quarters full.
- g. Brake fluid reservoir is leaking or damaged.
- h. Brake fluid is contaminated.
- i. Any visual leak from an electrical component, such as an alternator, auxiliary heater, etc.
- j. Electrical cable insulation (chafed, frayed, damaged, burnt, bare cable to be exposed).
- k. Any power terminal uncovered.

### **Bumpers ([CFR 393.203](#))**

Reject if:

- a. Bumper is not firmly attached to frame or chassis.
- b. Bumper is not within 30 inches above a level ground.
- c. Bumper is less than 18 inches from the widest part of the bus.
- d. Bumper extends beyond the widest part of the vehicle.

## **Body ([CFR 393.203](#))**

Reject if:

- a. Vehicle is not free of any deformations arising from a collision, crash or other impact, excepting minor dents and blemishes.
- b. Structural integrity of the body panels (including floor, sides and other portions of the outer shell) is not sturdy, rigid and complete.

## **Underbody**

### **Suspension ([CFR 393.207](#))**

Reject if:

- a. Axle positioning part is cracked, broken, loose or missing.
- b. Axle is not in proper alignment.
- c. Leaf spring is cracked, broken, missing or shifted out of position.
- d. Coil spring is cracked or broken.
- e. Torsion bar or system is cracked or broken.
- f. Air system is worn, damaged or leakage is greater than 3 psi in a five-minute period.
- g. Air is allowed into suspension system before at least 55 psi is in the braking system.
- h. Air suspensions must be level when in operation (not tilting to left or right).
- i. Rubber shear spring (Mor/ryde) has a tear more than 3 inches wide and more than 1/4-inch deep.

### **Steering ([CFR 393.209](#))**

Reject if:

- a. Steering universal joints are worn, faulty or repaired by welding.
- b. Steering gear box is loose or missing mounting bolts.
- c. Steering gear box or mounting bracket are cracked.
- d. Pitman arm on the steering gear is loose.
- e. Power steering leaks.
- f. Power steering will not turn wheels through its full range with standard OEM (lock to lock) while vehicle is motionless and idling.
- g. There is any movement under steering load of a stud nut.
- h. Any motion, other than rotational, between any linkage member and its attachment point.
- i. Loose clamp or clamp bolt on tie rod or drag link.
- j. Any movement in a ball joint other than rotational while suspension is supported by a floor jack, hoist or jack stand.

## Brakes ([CFR 393.40](#))

Reject if:

- a. Air or hydraulic leaks are present.
- b. Any brake part is missing, excessively worn, loose or broken.
- c. There is no braking action at any wheel.
- d. Brake hose/tubing that is leaking, restricted, deteriorated, insecurely fastened, retained, improperly joined or damaged.
- e. Any brake hose or tubing contacts a wheel, tire, steering component or frame.
- f. Brake lining is broken, not firmly attached to shoe, or contaminated with oil, fluid or grease.
- g. Brake drum is scored greater than 0.06 inches.
- h. Brake drum thickness less than stamped on the assembly, or as stated by OEM.
- i. Brake drum is broken or has a crack extending to an open edge.
- j. Air drum brake lining thickness is less than 1/4 inches at shoe center.
- k. Hydraulic or electric drum braking lining thickness is less than 1/16 inches at shoe center.
- l. Disc brake lining is less than 1/8 inches at its thinnest point.
- m. There is a mismatch of air chamber sizes or slack adjuster lengths.
- n. [Automatic slack adjusters](#) are missing from a vehicle built after Oct. 20, 1994.
- o. Any automatic slack adjuster is out of adjustment.
- p. Evidence of metal-to-metal contact to a rotor.
- q. Evidence of rusted or discolored rotor surface or cracked to the edge.
- r. Any wheel seal is leaking that shows evidence of contamination to the braking surfaces.
- s. Brake chamber push rod travel exceeds the OEM's maximum stroke allowance as follows:

### Bolt-Type Brake Chambers

Type	Outside diameter	Brake readjustment limit
A	6 15/16 inches (176 mm)	1 3/8 inches (34.9 mm)
B	9 3/16 inches (234 mm)	1 3/4 inches (44.5 mm)
C	8 1/16 inches (205 mm)	1 3/4 inches (44.5 mm)
D	5 1/4 inches (133 mm)	1 1/4 inches (31.8 mm)
E	6 3/16 inches (157 mm)	1 3/8 inches (34.9 mm)
F	11 inches (279 mm)	2 1/4 inches (57.2 mm)
G	9 7/8 inches (251 mm)	2 inches (50.8 mm)

### Clamp-Type Brake Chambers

Type	Outside diameter	Brake readjustment limit: standard stroke chamber	Brake readjustment limit: long stroke chamber
6	4 1/2 inches (114 mm)	1 1/4 inches (31.8 mm)	N/A
9	5 1/4 inches (133 mm)	1 3/8 inches (34.9 mm)	N/A
12	5 11/16 inches (145 mm)	1 3/8 inches (34.9 mm)	1 3/4 inches (44.5 mm)
16	6 3/8 inches (162 mm)	1 3/4 inches (44.5 mm)	2 inches (50.8 mm)
20	6 25/32 inches (172 mm)	1 3/4 inches (44.5 mm)	2 inches (50.8 mm) 2 1/2 inches (63.5 mm) <sup>1</sup>
24	7 7/32 inches (184 mm)	1 3/4 inches (44.5 mm)	2 inches (50.8 mm) 2 1/2 inches (63.5 mm) <sup>2</sup>
30	8 3/32 inches (206 mm)	2 inches (50.8 mm)	2 1/2 inches (63.5 mm)
36	9 inches (229 mm)	2 1/4 inches (57.2 mm)	N/A

### Bendix DD-3 Brake Chambers

Type	Outside diameter	Brake readjustment limit
30	8 1/8 inches (206 mm)	2 1/4 inches (57.2 mm)

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<sup>1</sup> For type 20 chambers with a 3-inch (76 mm) rated stroke.

<sup>2</sup> For type 24 chambers with a 3-inch (76 mm) rated stroke.

### Rotochamber-Type Brake Chambers

Type	Outside diameter	Brake readjustment limit
9	4 9/32 inches (109 mm)	1 1/2 inches (38.1 mm)
12	4 13/16 inches (122 mm)	1 1/2 inches (38.1 mm)
16	5 13/32 inches (138 mm)	2 inches (50.8 mm)
20	5 15/16 inches (151 mm)	2 inches (50.8 mm)
24	6 13/32 inches (163 mm)	2 inches (50.8 mm)
30	7 1/16 inches (180 mm)	2 1/4 inches (57.2 mm)
36	7 5/8 inches (194 mm)	2 3/4 inches (69.9 mm)
50	8 7/8 inches (226 mm)	3 inches (76.2 mm)

### Frame, Chassis and Crossmembers ([CFR 393.201](#))

Reject if:

- Frame is cracked, loose, sagging or broken.
- Holes have been drilled in the top or bottom rail flanges, except as specified by OEM.
- Frame components are missing, cracked, broken, loose, have rust holes or are in deteriorated condition.
- Support components are missing, cracked, broken, loose, have rust holes or are in deteriorated condition.
- Non-OEM components are welded to the frame, chassis or crossmembers.

### Drive Shaft ([CFR 393.89](#))

Reject if:

- Universal joints, slip joints or carrier bearings show excessive wear.
- Shaft safety guard(s)/loops are missing or ineffective.

## **Exhaust System ([CFR 393.83](#))**

Reject if:

- a. Any part of the system is temporarily repaired with wrap or patches.
- b. There are holes, cracks, or loose or leaking seams.
- c. A muffler cutout or similar device is present.
- d. Any part of the system passes through the passenger compartment.
- e. System is not securely fastened with proper clamps and hangers.
- f. Lacking adequate heat shields to protect electrical wiring, fuel supply, suspension components or other combustible parts of the vehicle from damage.
- g. Exhaust discharges immediately below the fuel tank or fuel filler pipe.
- h. Exhaust discharges at or more than 6 inches forward of the rearmost part of a bus powered by a gasoline engine.
- i. Exhaust discharges at or more than 15 inches forward of the rearmost part of the bus or to the rear of all doors or windows designed to be opened, except emergency exits, on a bus powered by fuels other than gasoline.

## **Fuel System ([CFR 393.65- 393.69](#))**

Reject if:

- a. There is fuel leaking at any point in any system.
- b. Any part of the fuel system is not securely fastened.
- c. Fuel tank or line is not designed/manufactured in accordance with FMCSA 393 Subpart E.
- d. Any fuel line is contacting high-temperature surfaces or moving parts.
- e. Fuel tank or line intrudes into or above any driver or passenger compartment.
- f. Any part of the fuel tank is forward of the front axle.
- g. Any part of the system extends beyond the widest part of the bus.

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