

## MINISTRY OF TRANSPORT AND COMMUNICATIONS

**OFFICIAL Mexican Standard NOM-068-SCT-2-2000, Ground Transportation - Federal motor transport service for passengers, tourism, hauling and private transportation - Mechanical and safety conditions for operating trucks on national roads and bridges.**

In the margin a seal with the national coat of arms reading: United States of Mexico - Ministry of Transport and Communications.

OFFICIAL MEXICAN STANDARD NOM-068-SCT-2-2000, GROUND TRANSPORTATION - FEDERAL MOTOR TRANSPORT SERVICE FOR PASSENGERS, TOURISM, HAULING AND PRIVATE TRANSPORTATION - MECHANICAL AND SAFETY CONDITIONS FOR OPERATING TRUCKS ON NATIONAL ROADS AND BRIDGES.

AARON DYCHTER POLTOLAREK, Deputy Minister of Transportation, as President of the National Advisory Committee on Standardization (NACS) for Ground Transportation, based on articles 36 sections I, IX, XII and XXVII of the Federal Public Administration Act (LOAPF); 1st and 38 section II, 40 sections III, XVI and XVII, 41, 43 and 47 section IV of the Federal Law on Standards and Metrology; 1st and 5th sections IV and VI and 39 of the Act Respecting Highways, Bridges and the Federal Transport System; 3rd and 6th section II of the Regulations on Federal Motor Transport and Auxiliary Services; 81 of the Regulations pursuant to Transportation on Federal Highways; 14 of the Regulations governing the Weight, Dimensions and Capacity of Motor Transport Vehicles which Operate on Federal Highways and Bridges; 41, 42 and 43 of the Regulations governing Ground Transportation of Hazardous Materials and Residues; 1st, 6th sections XIII and 19 sections X and XV of the Internal Regulations of the Ministry of Transport and Communications; and other applicable ordinances, and

### CONSIDERING

that it is necessary to use consistent procedures for inspecting and checking the mechanical specifications of motor transport vehicles providing services for passengers, tourism, hauling and private transportation on federal highways and bridges, in order to determine their operational limitations and to promote the use of vehicles in optimum condition for such services.

That having complied with the Federal Law on Standards and Metrology and its Regulations on the creation of Official Mexican Standards, on June 11, 1999, the Deputy Minister of Transportation ordered that the Draft Official Mexican Standard PROY-NOM-068-SCT-2-1999, Ground Transportation - Federal motor transport service for passengers, tourism, hauling and private transportation - Mechanical and safety conditions for operating trucks on national roads and bridges be published in the *Diario Oficial de la Federación*, so that the public may read it.

That for a period of 60 calendar days after the date of its publication, the Draft Official Mexican Standard and the Regulatory Impact Statement, referred to in article 45 of the Federal Law on Standards and Metrology were available to the general public for their perusal.

That for the period indicated, all interested parties submitted their comments to the Draft Standard in question, and they were analyzed by the National Advisory Committee on Standardization for Ground Transportation, and any resulting observations were integrated into the Official Mexican Standard.

In view of the above, I order that Official Mexican Standard NOM-068-SCT-2-2000, Ground Transportation - Federal motor transport service for passengers, tourism, hauling and private transportation - Mechanical and safety conditions for operating trucks on national roads and bridges, be published in the *Diario Oficial de la Federación*.

Mexico City, June 1, 2000 - Deputy Minister of Transportation and President of the National Advisory Committee on Standardization for Ground Transportation, **Aarón Dychter Poltolarek**. - Signature.

**OFFICIAL MEXICAN STANDARD NOM-068-SCT-2-2000, GROUND TRANSPORTATION - FEDERAL MOTOR TRANSPORT SERVICE FOR PASSENGERS, TOURISM, HAULING AND PRIVATE TRANSPORTATION - MECHANICAL AND SAFETY CONDITIONS FOR OPERATING TRUCKS ON NATIONAL ROADS AND BRIDGES**

**PREFACE**

The following Federal Government and Private Sector organizations participated in the drafting of this Official Mexican Standard:

**MINISTRY OF TRANSPORT AND COMMUNICATIONS.**

- S Deputy Minister of Transport.
- S Director General of Federal Motor Transport.
- S Director General of Legal Affairs.
- S Director General of Technical Services.
- S Director General of Ports and Merchant Marine.
- S Mexican Institute of Transport.

**MINISTRY OF TRADE AND INDUSTRIAL DEVELOPMENT.**

- S Deputy Minister of Standards and Industrial and External Trade Services.
- S Economic Deregulation Unit.
- S Director General of Standards.
- S Director General of Industry.

**MINISTRY OF THE INTERIOR.**

- S Federal Preventiva Police. (Policía Federal Preventiva)

**MINISTRY OF THE ENVIRONMENT, NATURAL RESOURCES AND FISHERIES.****NATIONAL INSTITUTE OF ECOLOGY.**

- S Director General of Hazardous Materials, Residues and Activities.

**FEDERAL ELECTRICITY COMMISSION.****MEXICAN PETROLEUM (PEMEX).****FEDERATION OF INDUSTRIAL CHAMBERS OF THE UNITED STATES OF MEXICO, CONCAMIN.****NATIONAL PEASANT'S FEDERATION.****NATIONAL FEDERATION OF MEXICAN TRANSPORT DRIVERS.****CAINTRA OF NUEVO LEON.****NATIONAL CHAMBER OF TRANSFORMATION INDUSTRIES.**

- S Section 37 Agricultural Pesticide and Fertilizer Producers.
- S Section 59 Auto Body Producers.
- S Section 105 Trailer and Semi-trailer Producers.

**NATIONAL CHAMBER OF IRON AND STEEL INDUSTRIES.****NATIONAL CHAMBER OF RUBBER INDUSTRY.****NATIONAL CHAMBER OF SUGAR AND ALCOHOL INDUSTRIES.****NATIONAL CHAMBER OF CELLULOSE AND PAPER INDUSTRIES.****NATIONAL CHAMBER OF DAIRY PRODUCERS.****NATIONAL CHAMBER OF MOTOR TRANSPORT HAULING.****NATIONAL CHAMBER OF PASSENGER AND TOURISM MOTOR TRANSPORT.****NATIONAL CHAMBER OF CEMENT PRODUCERS.****MEXICAN CHAMBER OF THE CONSTRUCTION INDUSTRY.****CHAMBER OF MINING OF MEXICO.****NATIONAL ASSOCIATION OF PRODUCERS OF BUSES, TRUCKS AND TRACTOR TRAILERS.**

- S American Caterpillar Co.
- S Consortium "G", Dina Group, Ltd.
- S Cummins, Ltd.
- S Detroit Diesel Allison of Mexico, Ltd.
- S Kenworth Mexico, Ltd.
- S Mercedes Benz Mexico, Ltd.
- S Mexican Buses, Ltd.

- S Navistar, Ltd.
- S Scania Mexico, Ltd.
- S Volvo Trucks of Mexico, Ltd.

ASSOCIATION OF HAULERS FROM CENTRAL VERACRUZ STATE

NATIONAL ASSOCIATION OF OIL AND EDIBLE OIL INDUSTRY.

NATIONAL ASSOCIATION OF THE CHEMICAL INDUSTRY.

NATIONAL ASSOCIATION OF PRIVATE TRANSPORT.

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### 1. Object and Scope

This Official Mexican Standard establishes the mechanical specifications to limit the transit of vehicles providing federal motor transport service for passengers, tourism, hauling and private transportation on national roads and bridges within the United States of Mexico, as well as the inspection procedures to determine such limitations.

### 2. References

This Official Mexican Standard is complemented by the following Official Mexican Standards and effective Mexican Standards or those which substitute them:

NOM-002-SCT-2	List of the most commonly transported hazardous substances and materials.	Published in the <i>Diario Oficial de la Federación</i> on October 30, 1995.
NOM-004-SCT-2	Identification system for units of hazardous materials and residues travelling via surface transport.	Published in the <i>Diario Oficial de la Federación</i> on September 13, 1995.
NOM-005-SCT-2	Emergency information for surface transportation of hazardous materials and residues.	Published in the <i>Diario Oficial de la Federación</i> on July 24, 1995.
NOM-006-SCT-2	Basic daily visual inspection principles for hazardous materials and residues travelling via surface transport.	Published in the <i>Diario Oficial de la Federación</i> on August 23, 1995.
NOM-019-SCT-2	General provisions for the cleaning and control of remnants of hazardous substances and residues in vehicles transporting hazardous materials and residues.	Published in the <i>Diario Oficial de la Federación</i> on September 25, 1995.

NOM-020-SCT-2	General requirements for the design and construction of tankers dedicated to transporting hazardous materials and residues, specifications SCT 306, SCT 307 and SCT 312.	Published in the <i>Diario Oficial de la Federación</i> on November 17, 1997.
NOM-043-SCT-2	Loading document for hazardous materials and residues.	Published in the <i>Diario Oficial de la Federación</i> on October 23, 1996.
NOM-067-SCT-2/SECOFI	Economical Motor Transport Surface Transportation and Mixed-Mid-Sized Buses- Characteristics and Safety and Technical Specifications.	Published in the <i>Diario Oficial de la Federación</i> on November 5, 1999.
NOM-008-SCFI	System of units of measure.	Published in the <i>Diario Oficial de la Federación</i> on October 14, 1993.

### 3. Definitions

For the purpose of this Official Mexican Standard, the following definitions will be used:

#### 3.1 Clamp.

Ring, strap or any similar device used to secure an object by fitting it tightly against other objects.

#### 3.2 Traction Bar/Triangular Structure.

Structural element of the coupling system that makes up part of the patín converter (dolly), having one pintle eye which is coupled with the hitch to support the traction force between the semi-trailer and the trailer.

#### 3.3 Torsion Bar.

Spring made up of a flexible bar, secured on one side, which absorbs twisting from angular force applied on the other side.

#### 3.4 Cabin.

Driver's compartment in vehicles.

#### 3.5 Seatbelt.

Hardware that acts on people's inertial forces under sudden braking conditions or accidents.

#### 3.6 Steering Column.

Shaft that the driver turns with the steering wheel to steer.

#### 3.7 Compressor.

Device that compresses air at a pressure higher than that of the atmosphere. In diesel engines, it is the mechanism that generates the air for the truck's, tractor trailer's, trailer's and semi-trailer's pneumatic system.

#### 3.8 Converter (dolly or patín).

Moveable suspension comprised of a frame with one or two axles, having tires and a small seat called a lower fifth wheel, which is used to hook up a trailer.

#### 3.9 Chassis or Frame.

Frame of a motor vehicle formed by two rigid beams which support and include all of the mechanical parts of the truck or tractor trailer, such as: motor train, suspension, steering, braking system, etc.

**3.10** Hydraulic Steering.

Mechanism used to reduce the force of, and translate the steering wheel's rotation into a linear movement in the desired direction.

**3.11** Kingpin-type Axle.

Free shaft with wheels, connected to the steering system, mounted on hinges which turn on the pivots of the extremities of the shaft's casing.

**3.12** Exhaust Pipe.

For the expulsion of gases from combustion in engines through a tube which takes them out of the engine.

**3.13** Groove.

Every small parallel groove carved into a surface.

**3.14** Electrical Brakes.

Electrical system for stopping or decreasing the speed of a vehicle by applying friction to the wheels.

**3.15** Emergency or Parking Brake.

Braking system which allows decreasing the speed of a motor transport vehicle or stopping it completely if the service brake system fails.

**3.16** Hydraulic Brakes.

System consisting of base brakes, using hydraulic brake cylinders on every axle.

**3.17** Pintle Hook or Hitch.

Structural element which is fixed to the back of the semi-trailer, and which is used to hook up the trailer.

**3.18** Spring Leaves.

Suspension spring comprised of various individual leaves of the same thickness.

**3.19** Looseness.

Maladjustment, a mechanical part which exceeds the allowed level of adjustment.

**3.20** Pascal.

Unit of pressure of the International System, equivalent to the force exerted by one Newton on a one square meter surface.

**3.21** P.S.I.

Unit of pressure of the English System, equivalent to the force exerted by one pound on a one square inch surface, which translated into English is: pounds per square inch.

**3.22** L.C.P.A.F.

Act Respecting Highways, Bridges and the Federal Transport System.

**3.23** R.T.C.F.

Transit Regulations for Federal Highways.

**3.24 R.T.T.M.R.P.**

Regulations governing Surface Transportation of Hazardous Materials and Residues

**3.25 R.S.P.D.C.**

Regulations governing the Weight, Dimensions and Capacity of Motor Transport Vehicules which Operate on Federal Highways and Bridges

**4. Mechanical and vehicular component specifications, possible defects and evaluation****4.1 Lighting System (Lamps and lights).**

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Headlights, high beams and low beams.	Missing or inoperable. When they are needed for climatological reasons or for night travel.	*			X	7	R.T.C.F.
Gauge lights and lamps,	Missing or inoperable.		**			8, 10, 11, 12 and 13	R.T.C.F.
parking lights, backing lights,	Inappropriate mounting or wrong colour. (20% or more of total)	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
rear lights and marker lights.	Fluctuating or intermittent light. 20% or more of total. Applicable when repaired immediately.*	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
Brake lights.	Inappropriately mounted.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Missing or inoperable.		**		X	8, 10, 11, 12 and 13	R.T.C.F.
Rear projecting load lamps and lights.	Missing or inoperable.	*				16 and 76	R.T.C.F.
	Wrong colour, fluctuating or intermittent light. (20% or more of total)	*				39 and 70, 2 <sup>nd</sup> paragraph	R.T.C.F.
Electrical system fuses.	Bridged with wire, aluminum or any other material.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
Electrical cables.	Crimped or split.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Worn, exposed insulation or wire twisted with other cables.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F

	In contact with other vehicle components.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Bridged.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F

**4.2** Danger signs. (For extended loads.)

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Extended load indicator, including flags.	Missing.	*				16	R.T.C.F.

**4.3** Windshield wipers.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Windshield wipers and spray jets.	Missing or inoperable, when they are necessary for climatological reasons.	*				31	R.T.C.F.
	Not having at least one that can clean the driver's area of visibility.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Inoperable spray jets.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F

**4.4** Windshield.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Windshield.	Broken or shattered, reducing driver visibility.		**			31	R.T.C.F.

**4.5** Tires, Inner Tubes and Belts.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION

Tires.	Smooth rolling surface and treads at the wear line.		**			33	R.T.C.F.
	Any defect in the axle.			***		39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Depth of the rolling surface, of the tires which are mounted on the axle, with a minimum thickness of 0.32 cm (1/8").			***	X	33	R.T.C.F.
	Depth of the rolling surface of the tires on other axles, with a minimum thickness of 0.158 cm (1/16"). (20% or more of the total).			***	X	33	R.T.C.F.
	The walls are cut or damaged, and their structural fibres are exposed.		**			33	R.T.C.F.
	Design or type not for highway use, or not suited for mounting on the kingpin-type axle.		**			33	R.T.C.F.
	Protuberances and weak sections, which cause separations in the rolling surface. (20% or more of the total)	*				33-B	R.T.C.F.
	Insufficiently inflated, and have contact with other vehicle components outside of their mountings.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Contact with another tire in a dual mounting.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F
	Radials with structural belts exposed and/or with deteriorated side belts.	*				33	R.T.C.F.
	Pulls or abrasions on the rolling surface or reinforcement.		**			33	R.T.C.F.
	Deflated or having noticeable leaks. (10% or more of the total).	*				33	R.T.C.F.
	Patching that is pulling apart.		**			33	R.T.C.F.

	Tires patched on the kingpin-type axle.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Use of radial tires on different rims.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Combination of conventional and radial tires on the axle.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Inner Tubes and Belts.	Inner tube or belt hanging out by the valve of the rim and touching the valve stem.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Objects between tires on the axle with dual mounted tires.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Tires separating from wheels.	Anything that causes the frame or chassis to make contact with or between the tires.	**				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

#### 4.6 Wheels and Rims

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Lateral sealing ring.	Expired, broken, cracked. (More than 20%).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Wheel and rim, cracks.	Any crack in the rim. (From 20% or more).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Flared bolt holes. (More than 50% normal size).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Wheel and rim, welding.	Between hand holes. (agujeros de mano)		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
No more than one wheel or rim	Between hand holes to rim.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
in suspension with 8 wheels; and no more	Bent or broken rim.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
than two wheels or rims in	On the wheels of the axle.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
suspension with 12 wheels.	On wedge type wheels on the length of one of its edges or on three or mor edges.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

Dismountable tubeless adapter.	Cracks in three or more edges.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Clamps, birlos and nuts.	Missing screws, nuts and clamps (butterfly) (20% or more of the total).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or broken birlos (20% or more of the total).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	May not be level with the wheel (20% or more of the total).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

#### 4.7 Frame, rails or truck or tractor trailer chassis

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Frame, rails or chassis.	Parts becoming unfastened.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
The damage may not be greater than 20%.	Missing screws in the crossmembers.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Bad welding in the rails.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Expired crossmembers.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracked, loose, bent or broken.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Parts of the structure fractured or welding missing.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracks, twisting or rupture of the components, allowing the body to move.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any crack, dent or rupture in the components which allows parts of it to move.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing, broken or loose screws or brackets	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Drill holes in the top or bottom, except for those specified in the manufacturer's design. (More than 2 holes less than 25 cm apart).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
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**4.8** Semi-trailer and/or trailer frame.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Upper structure of van semi-trailer.	Parts coming loose.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Lower structure of any type of semi-trailer and/or trailer.  The damage must not be greater than 20%.	Broken or cracked with the platform area separating.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Floor or crossmembers sinking (droppage).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Loose or missing restraints on the side posts adjacent to the crack.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Twists, bends or weakening due to cracks in the chassis.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Twists, bends or cracks in the load surface.		**			Twists, bends or weakening due to cracks in the chassis	39 and 70, 2 <sup>nd</sup> paragraph
Floor crossmembers of van or platform semi-trailer.	Broken or not secured to the lower rail.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Expired.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Floor broken or with protuberances and sunken crossmembers.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Fiberglass or plywood boards or panels for box semi-trailer.	Sinking, bent or cracked posts.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Damage in the load area which run through the fiberglass or plywood panels.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Load area of van, platform or flatbed semi-trailer.	Defect in the kingpin coupling plate.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Defect in the rails of the frame of the axle mountings.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Bumper (rear protection)	Missing bumper.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Height of the floor to the lower part of the bumper must not be greater than 76.2 cm (30"). (With an empty vehicle).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

#### 4.9 Fuel system.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Tank.	Extending past the vehicle's width.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Gas cap loose.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Gas cap missing.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Mounting detached or loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Gas leaks.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Leaks in the cooling system and heater of the fuel system.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Filling pipe.	Mounted in such a way that it allows fuel spillage.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	No ventilation system in tanks greater than 94.5 litres (25 gallons).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Fuel lines.	Inappropriate connection.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Fuel leaks.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Fuel tank ventilation system.	No ventilation hole in the gas cap.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

#### 4.10 Load securing.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Canvas.	Securing in vehicles transporting bulk.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Obstructing the driver's vision.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Obstructing the rear lamps and lights.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Blocking.	Missing straps and tension safeties which secure the load or the container to the chassis or platform.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Poorly secured spare tire.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Chains.	With cracks, breaks, stretches or twists.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Worn, ruptured and/or knotted.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	With welds, except the original welding in the links and connections.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Steel cables.	With bent knots or working section of the core split.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	With decolouration due to excesses of heat or electricity from work.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	With corrosion in the internal or external fibres.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	More than three breaks in any strand or at the end of the connection.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

Fibre cables.	With burns, except on colour seals on the ends.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	With loss of strength due to reduction in the original diameter.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	They are loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Ineffective for connecting, uniting or repairing ties.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Synthetic material belts.	With cuts, burns or perforations in the material.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	With securing or tension mechanisms displaying broken joints, links or fittings.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Hooks, ratchets and fittings.	Reduced original diameter through wear or corrosion.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Openings in the links, hooks or ratchets from tension in the work areas of the cords, belts or chains.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Visible twists.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Welds with discolouring due to excess heat.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any visible rupture.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Broken, loose, bent or cracked side secured rails, hooks or fittings.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Secured fittings for containers with cuts, worn, twisted, bent, stretched or broken welds.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Floor rings with grooves, clefts, worn, twisted or with broken welds.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Stake-type side and end boards in trucks, semi-trailers and/or trailers.	Loose mounting.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Separation of side boards to ensure that the load does not fall.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Shorter walls which allow the load to fall if it is not well secured	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Headboards or boards in front of platform. Except for trucks and tractor trailers with winches.	Height above the trailer floor sufficient to impede or block the load's forward movement.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Sufficient width to impede the load's movement.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

**DEFECT CLASSIFICATION TABLE**

Total size of defect shall not exceed the following limits

Size of section	Tolerance
10.1 cm (4")	Over 1.9 cm (3/4")
7.5 cm (3")	Over 1.6 cm (5/8")
5 cm (2")	Over 1.0 cm (3/8")
4.5 cm (1 3/4")	Over 1.0 cm (3/8")

**NOTE:** All ruptures, burns and/or perforations around the belt are added to the width of the belt for measuring length. But a defect is added, regardless of the width specification. Belts that do not have the original joints or mountings are not allowed.

**4.11 Exhaust System.**

COMPONENT	DEFECTS	EVALUATION	SERIOUS	LEGAL REFERENCE	
				ARTICLE	REGULATION
Exhaust pipe for gases, smoke and multiple collectors.	With cracks or orifices which impede the discharge of smoke from the pipe.	**		39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Unsafe mounting.	**		39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Broken, damaged or perforated parts.	**		39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	For gas vehicles, the discharge is in the rear, and the exhaust pipe must end 15.2 cm (6") before the rear of the vehicle, and for diesel vehicles, before 38.0 cm (15").		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
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#### 4.12 Steering System.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Steering wheel.	Badly adapted or loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Excessive play (determined in accordance with the table in point 5.20 item 5).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Steering column.	Worn or welded points.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracks.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Detached joints.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing U bolts.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Worn or welded universal couplings.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or loose securing bolts.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or loose steering wheel bolts.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Front shaft and components, except the steering column and including the shaft.	Any crack.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Welding repairs.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Worn bolts.		**1			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Cracks in welding.		**1		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Detached or loose parts. (U bolts, spring suspension supports, etc.).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Steering gear box.	Detached from its mounting on the chassis.	*1			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracked mounting brackets.	*1			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or loose restraints.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any crack.	*1			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or loose mounting screws.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Rupture in the gearbox or in the mounting brackets.	*1			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Coupling bar and contrabarras.	Loosening of the bar with the steering system brackets. (Excessive play).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Welding repairs.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Detached, loose or missing clamps.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	(Roscada) Ring-shaped joint loosening.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Worn ends.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Loose nuts.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Hydraulic mechanism.	The auxiliary power cylinder is loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Universal joints.	When steering, the joints move or the bolts or stud bolts are loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Movement in any joint except the revolving one.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Welding repairs.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Tension rod and contrabarras.	Loose clamps or bolts in the connecting rod, contrabarras or steering shaft rod.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Roscadas or loose joints or too much play in the joints.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Nuts.	Missing or loose in tension rods, connecting rod, contrabarra or steering shaft rod.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Steering system.	Any modification or other condition which interferes with the free movement of any component of the steering system.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

## STEERING PLAY MUST NOT EXCEED THE FOLLOWING LIMITS

Steering Wheel Diameter	Manual System	Servo Steering System
40.6 cm (16")	5.1 cm (2")	11.4 cm (4 1/2")
46.0 cm (18")	5.7 cm (2 1/4")	12.0 cm (4 3/4")
50.8 cm (20")	6.3 cm (2 1/2")	13.3 cm (5 1/4")
55.9 cm (22")	7.0 cm (2 3/4")	14.6 cm (5 3/4")

## 4.13 Suspension system.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Mechanical suspension.	Cracked or expired suspension frame.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Broken, loose or missing components.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	State of the spring leaves.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	State of springs, if there are any.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Spring mounting bracket in poor condition.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Rocker arms in poor condition in two- and three-axle suspensions.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Clamps (U bolts) installed poorly		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracked, broken or welded (templadores).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Pneumatic suspension.	Cracked or expired suspension frame.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Broken, loose or missing components.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Air chambers in poor condition.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Shock absorbers in poor condition.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Spring mounting brackets in poor condition.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Poorly installed clamps (U bolts).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Stabilizer bars in poor condition.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Mixed suspension.	Cracked or expired suspension frame.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Broken, loose or missing components.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Sliding suspension in semi-trailer or trailer.	Missing or defective mounting bolts.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Securing pin does not work in closed position.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracked or detached pieces of frame.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Safety bolt that is missing or does not close properly (one bolt on each side).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

Torsion bar/steering rod.	Broken or cracked.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Clamps or U bolts.	Detached.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Space under the bolts.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Space between spring leaves.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

**4.14** Pneumatic Brake System.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Compressor.	Air leaks.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Detached or loose mounting.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Hose or pipes.	Air leaks.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Inappropriate connections.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Contact with moving or hot parts.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Curled, obstructed or broken.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Air reservoir.	Air leaks.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Detached.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Brake drums.	External cracks on the side of the drum.		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Contamination with oil or grease. (20% or more of the total).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Brake linings and shoes.	Excessive wear. (20% or more of the total).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	They do not move when applied. (20% or more of the total).	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	They do not make contact with the drum. (20% or more of the total).		**		X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Evidence of grease or oil filtration. (20% or more of the total).	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Brake chambers.	Detached or loose mounting.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Size of chamber different on the same shaft.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Noticeable air leak, broken or loose chamber.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Brake chamber mechanism.	Missing or twisted rod and gavlán (s cam?).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Push rods and adjusters.	Poor functioning. (20% or more of the total).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Beyond the adjustment limit (see tables below). (20% or more of the total).		**		X	25	R.T.C.F.
Kingpin-type axle brakes.	Any sign of a disconnected brake.	*1			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Disconnected and blocked air hose.	*1				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Space adjuster disconnected or in poor condition.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Emergency and parking brakes.	Low air pressure device. Must operate at a minimum of 3.87 kg/cm <sup>2</sup> , (55 lbs/in <sup>2</sup> ).		**		X	25.3 a) and b) 26	R.T.C.F.
Cotter and horquilla (fork?) pins.	Missing. (20% or more of the total).	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	In danger of coming off. (20% or more of the total).	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

### SPECIFICATIONS FOR CHECKING BRAKES.

#### CLAMP RING BRAKE CHAMBER.

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
6	11.4 cm (4 1/2")	3.2 cm (1 1/4")
9	11.4 cm (4 1/2")	3.5 cm (1 3/8")
12	14.4 cm (5 11/16")	3.5 cm (1 3/8")
16	16.2 cm (6 3/8")	4.4 cm (1 3/4")
20	17.2 cm (6 25/32")	4.4 cm (1 3/4")
24	18.3 cm (7 7/32")	4.4 cm (1 3/4")
30	20.5 cm (8 3/32")	5.1 cm (2")
36	22.9 cm (9")	5.7 cm (2 1/4")

**NOTE:** Brakes that are at the adjustment limit are not considered in violation.

**LONG STROKE CLAMP RING BRAKE CHAMBER**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
16	16.2 cm (6 3/8")	5.1 cm (2")
20	17.2 cm (6 25/32")	5.1 cm (2")
24	18.3 cm (7 7/32")	5.1 cm (2")
24*	18.3 cm (7 7/32")	6.3 cm (2 1/2")
30	20.5 cm (8 3/32")	6.3 cm (2 1/2")

**NOTE:** For maximum three stroke chamber 24 types.

**PISTON ROD BRAKE CHAMBER**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
30	16.5 cm (6 1/2")	6.4 cm (2 1/2")

**BOLT TYPE BRAKE CHAMBER**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
A	17.7 cm (6 15/16")	3.5 cm (1 3/8")
B	23.3 cm (9 3/16")	4.4 cm (1 3/4")
C	20.5 cm (8 1/16")	4.4 cm (1 3/4")
D	13.3 cm (5 1/4")	3.2 cm (1 1/4")
E	15.8 cm (6 3/16")	3.5 cm (1 3/8")
F	27.9 cm (11")	5.7 cm (2 1/4")
G	25 cm (9 7/8")	5.0 cm (2")

**REVOLVING TYPE BRAKE CHAMBER**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
9	10.9 cm (4 9/32")	3.9 cm (1 1/2")
12	11.2 cm (4 13/16")	3.9 cm (1 1/2")

16	13.8 cm (5 13/32")	5.1 cm (2")
20	15.1 cm (5 15/16")	5.1 cm (2")
24	16.3 cm (6 13/32")	5.1 cm (2")
30	17.9 cm (7 1/16")	5.7 cm (2 1/4")
36	19.4 cm (7 5/8")	7.0 cm (2 3/4")
50	22.5 cm (8 7/8")	7.6 cm (3")

#### DD-3 BRAKE CHAMBER

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
30	20.6 cm (8 1/8")	5.7 cm (2 1/4")

**NOTE:** This chamber has three air lines, and it is found in motor vehicles.

#### 4.15 Hydraulic Brake System.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Reservoir.	Master cylinder with fill level below its capacity.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	There is no reserve in the pedal with the engine running, except when pumping the pedal.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Brake linings, except for brakes of the kingpin axle.	Non-existent, loose or missing.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	They do not move when the brakes are applied. They do not make contact with the drum.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Evidence of oil filtration in or around the brake, lining the drum interface.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Kingpin axle brakes.	Defect in braking, or no braking action.	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Decompensation of the power unit in the kingpin axle.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Non-existence of a brake lining segment.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

## 4.16 Electric Brake System.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Electric brakes (when installed).	Missing connection between the engine and arrastre (pull?).	*			X	39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or defective brake on wheels that brake a vehicle or combination of vehicles.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Non-existent, ruptured or inoperative braking device.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Tractor trailer protection.	Not equipped with, or inoperative power unit (compressor) safety valves.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

## 4.17 Coupling System.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Fixed fifth wheel.	Missing, detached or broken screws in the mounting support. (20% or more of the total anywhere).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracks in the chassis support mounting.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any crack in the welding.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Sliding fifth wheel.	Movement between the slider bracket and the base.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracked elements.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any missing reinforcement.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

Sliders.	More than two non-existent or damaged screws on any side.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any missing or damaged front or rear reinforcement.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any weld in the restraints cracked, or any crack in repair welding caused by stress in areas of high tension.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Secondary pin.	Is not in closed or secured position.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Pintle Hook.	Cracks in hooks.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracks in the mounting surface.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing or loose screws, insufficiently secured.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Welds in any surface.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Defect in the closing mechanism.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Cracks in the chassis cross member and its mounting area.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Draw bar eye (pintle eye).	Any crack in the joining welds or in the traction bar eye.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Damaged or missing screws (20% or more of the total).	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any improper welding.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Draw bar/Triangular structure.	Cracks in the mounting surface.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Missing screws.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Any rupture.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Instruments and interior. Air pressure gauge. Emergency warning <sup>1)</sup> . Emergency brake. Seatbelt. Fire extinguishers. First aid kit.	Inoperative.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Safety triangles. Seats. Speed control device.	Non-existent.		**			26 <sup>1)</sup>	R.T.C.F.
Tachometer. Windshield cleaning system.	1) Will only apply for the Emergency warning, in compliance with article 26 of the R.T.C.F.						

#### 4.19 Passenger area in buses.

COMPONENT	DEFECTS	EVALUATION			SERIOUS	LEGAL REFERENCE	
						ARTICLE	REGULATION
Line for standing passengers.	Non-existent.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Inappropriate colour.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Standing line sign for passengers.	Non-existent.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Seatbelts (when applicable).	Non-existent.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Emergency equipment.	Non-existent or inoperative.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Emergency exit.	Missing.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Inoperative.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Floor.	Holes.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Seats.	Not secured.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

	Punzocortante surface.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Windows.	Poor functioning.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Luggage carrier.	Loose or inoperative. (Does not open or close).		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Restroom, including door. (When applicable)	Inoperative.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Interior lights.	Inoperative.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Retractable stairway (When applicable).	Inoperative.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Emergency door. (When applicable).	Poor functioning (Does not open or close)		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Television. (When applicable).	Poorly secured or loose.	*				39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
Air conditioning, heating, sound system, video cassette player, cafeteria service, curtains. (When applicable).	Missing.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.
	Inoperable.		**			39 and 70, 2 <sup>nd</sup> paragraph	L.C.P.A.F.

**4.20** Complementary specifications and possible defects in vehicles transporting hazardous materials and residues.

Embarcation document.	Missing document.		**			52 clause I	R.T.T.M.R.P.
	The form does not supply the information required in the Standard.		**			52 clause I NOM-043-SCT2	R.T.T.M.R.P.
	Erroneously completed form.		**			52 clause I	R.T.T.M.R.P.
	Incompatible materials detected.		**			23, 47 and 108	R.T.T.M.R.P.
Logbook or driver's hours of service.	Non-existent		**			52, 2 <sup>nd</sup> Article Clause II	R.T.T.M.R.P.

Logbook of daily visual inspection	Non-existent or poorly completed form		**			52, 2 <sup>nd</sup> Article Clause II	R.T.T.M.R.P.
	The form does not supply the information required by the Standard.		**			NOM-006-SCT2	R.T.T.M.R.P.
Transportation emergency information.	Does not carry the Emergency Response Guide or the Transportation Emergency Sheet for each product or class of products.		**			49 and 52 Section II	R.T.T.M.R.P.
	Carry Transportation Emergency Sheets which do not correspond to the products being transported.		**			49 and 52 Section II NOM-005-SCT2	R.T.T.M.R.P.
Identification placards.	Missing 50% or more of the placards (4) which identify the hazardous substance, material or residue; or any identification placard which does not match the hazardous materials being transported. If different classes of hazardous materials are being transported at the same time, at least the two highest risk ones must be identified with 4 placards for each of the materials.			***		38 and 39	R.T.T.M.R.P.
	They do not match the material being transported.	*				38 and 39	R.T.T.M.R.P.
Appropriate tank.	Carry book-shaped or magazine-type placards .		**			38 NOM-004-SCT2	R.T.T.M.R.P.
	Use placards with the word "residue".			***		39 NOM-004-SCT2	R.T.T.M.R.P.
	Use tanks which are neither designed nor authorized for the products being transported.		**			34 NOM-020-SCT2	R.T.T.M.R.P.
	Escaping, leaking or spilling material.		**			46	R.T.T.M.R.P.
	More than 25% of the anchoring and components are missing or are ineffective.		**			47	R.T.T.M.R.P.

	Metallic or glued specification plaque with expired test dates.			***		37 and 41 NOM-020- SCT2	R.T.T.M.R.P.
Bulk loads.	Marked. (Once the Conformance Evaluation has been implemented).			***		32 NOM-007- SCT2	R.T.T.M.R.P.
	Leaking crate and/or container.			***		22	R.T.T.M.R.P.
	Incompatible food merchandise, whether products for human or animal consumption.			***		6	R.T.T.M.R.P.
	Not blocked or secured.			***		47	R.T.T.M.R.P.

**4.21** Application of vehicle restrictions.

**4.21.1** \*When these defects are evident, the unit's driver will be allowed to correct them immediately, so that, once the correction has been verified, he may continue his trip without it exempting him from the corresponding sanctions.

**4.21.2** \*\*For these defects, the vehicle will be sanctioned and allowed to continue on to its destination with the aim of repairing the defects found, and once corrected, the vehicle will be allowed to travel again, once it has been verified. A written advisory will be provided to the effect that defects discovered will have a maximum of 20 calendar days to be corrected.

**4.21.3** \*\*\*For these defects, the vehicle will be sanctioned, but will not be allowed to continue on. The vehicle must be towed to a place determined by the owner, so that, once it is repaired and checked, it may travel again. While it is in operation, the evaluation form will be carried in the vehicle.

**4.21.4** \*Where repairs are not feasible at the verification point, the evaluation will be done \*\*\*.

**4.21.5** \*\*1 Five days will be allowed for repairing welding cracks.

**4.21.6** In cases covered in clauses 4.21.2 and 4.21.3, vehicles may continue on with the evaluation form and the document attesting to the repairs. They will again be subject to verification in the appropriate Operatives or the Verification Units.

**4.21.7** Where verification operatives find defects which have not been corrected in the time allowed, the vehicle will be doubly sanctioned.

**4.22** Evaluation procedures for restricting vehicles on federal highways and bridges.

- S Defects discovered while inspecting a federal motor transport and private transport vehicle, in accordance with the evaluation table, will be sufficient to limit their transit on federal highways until such defects are corrected, in accordance with clause 4.21.
- S When hazardous or perishable materials, residues, remnants and merchandise are transported, the vehicle will not be detained, and it will be conducted, using maximum safety measures, to the closest safety zone for transferring the load. For hazardous materials, residues or remnants, this must be done by properly trained personnel, following the procedures of the Transportation Emergency Information or of the producer of the product.
- S When transporting hazardous, bio-infectious substances, materials and/or residues, check the loading and unloading system, mechanization system, refrigeration, temperatures and the drainage system and other necessary requirements, in accordance with the corresponding Standard.

**5. Procedure for evaluating conformance with this Official Mexican Standard**

Based on articles 38 section V, 68 and 73 of the Federal Law on Standards and Metrology; 35 and 39 of the Act Respecting Highways, Bridges and the Federal Transport System; 19 sections II, X and XXII of the Internal Regulations of the Ministry of Transport and Communications; subsection 81 of the Regulations Governing Transit on Federal Highways, certification and verification of compliance with this Official Mexican Standard will be carried

out in accordance with the following:

**5.1 Certification.**

**5.1.1** Certifying agencies which are accredited to certify new vehicles must request that manufacturers of motor vehicles, trailers or semi-trailers place an indelible and non-transferrable sticker on the vehicle, as well as a certificate on legal paper, indicating that vehicle, "make-, year/model-, and vehicle identification number (VIN)-", meets the minimum safety standards established in this Official Mexican Standard. For vehicles manufactured on a chassis, this certificate must include the evaluation of the body and the chassis together, such that the trademark of both manufacturers appears on the certificate.

**5.1.2** The certificate alluded to in the previous point will be issued for the vehicle lot by year/model and make, indicating the number of units in each lot, and the sticker for each of the vehicles in the lot. The lot sampling procedure will be undertaken according to Mexican Standard NMX-Z-012.

**5.1.3** All individuals and companies who produce or modify vehicles subject to this Official Mexican Standard must be registered with the Ministry of Trade and Industrial Development, and must have registered trademarks and technical designs patented with the Mexican Institute for Industrial Property, as well as complying with the production processes set out in Mexican standards NMX-CC-3 and NMX-CC-4.

**5.1.4** The sticker alluded to in point 5.1.1 must be green and, as set out in clause c) of point 5.2.1.2., must be made in accordance with the design established in Official Mexican Standard NOM-001-SCT-2-2000, of non-transferrable, self-destructing material, showing the name of the Organization that issues it, the folio number of the certificate that sanctions it, and its date of issue.

**5.2 Verification.**

**5.2.1 On Federal Roads and Bridges.**

**5.2.1.1** Vehicles, regardless of their year/model, will be subject to this Official Mexican Standard and to verification of their physical-mechanical state. This will be done on a random basis by the operatives working on the highway points set out by the Ministry, as well as in Central and Individual Terminals, Maritime Terminals and Airports, and at the headquarters of the permit holding agency or its premises, with the participation of the General Road Inspectors, as indicated in clauses "a" to "e".

**5.2.1.2** The verification alluded to above will be done on a vehicle-by-vehicle basis, in accordance with the inspection procedure set out in Appendix "A", annex 1, in such a way as avoid the creation of waiting lines. Once a vehicle has been checked, the next may be started.

a) Vehicles which pass inspections undertaken on federal roads and bridges will be issued the original Physical-Mechanical Evaluation Form, as per figure 22 of Appendix "A", and a sticker the validity period of which will depend on the unit's Physical-Mechanical state.

S The maximum time allowed for verifying a vehicle will be as follows:

Buses	20 minutes
General cargo	30 minutes

Hazardous Materials and Residues 20 minutes

For combined vehicles, a sticker for each of the units must be posted, even when the Form evaluates the entire vehicular combination in question.

- S Vehicles failing an inspection, according to the defects discovered in the Evaluation Procedure for Restricting Vehicles, will be given the original Physical-Mechanical State Evaluation Form, as per figure 23 of Appendix "A". This form will specify the defects discovered and a yellow sticker, indicating that the unit was inspected and sanctioned, in accordance with points 4.21.1 and 4.21.2 of this Standard. In the same way, vehicles which are not approved and are found under heading 4.21.3 will be issued a red sticker indicating that the unit may not continue under its own power.
- S Passenger and tourism vehicles will be subject to this revision in Central and Individual Terminals, Maritime Terminals and Airports before scheduling and beginning their trips, as well as at the headquarters of the permit holding agency or its premises.
- S Vehicles transporting Hazardous Materials and Residues will be inspected for points outlined in point 4.20, established by this Standard.

**5.2.1.3** Vehicles having the sticker issued by the Certification Organizations, Verification Units, will not be exempt from being checked on federal roads and bridges, as the General Road Inspectors must check the validity of those stickers. If such stickers have expired, the appropriate sanction will be applied, or where the unit has not been verified, this will be carried out, and the certificate and respective sticker will be issued, in accordance with clauses "a" and "b" of point 5.2.1.2.

**5.2.2** In Verification Units.

**5.2.2.1** Vehicle Physical-Mechanical Condition Verification Units established by the Ministry can also undertake the verification of the physical-mechanical state of vehicles. These Units may be operated by third parties who are authorized in conformance with the Federal Law on Standards and Metrology, Standard NMX-CC-016 "General Requirements for Accreditation of Verification Units", and Standard ISO/IECI-17020 "General Criteria for Operating Various Types of Verification Units". The Ministry will issue the corresponding edict for this purpose, in which the technical specifications of the infrastructure, equipment and standards will be set out, as well as the procedures and periodicity of verification.

**5.2.2.2** New vehicles will be exempt from verification for a period of 2 years beginning from the vehicle's date of manufacture. This will be proven with the respective bill on which will be certified the vehicle's identification number (VIN), as well as the certificate and sticker issued by the manufacturer, in accordance with points 5.1.1 and 5.1.2 of this Standard. If a vehicle has had an accident or if the manufacturer indicates in the vehicle's manual the frequency of periodic checks, the appropriate inspections and tests will be performed.

## **6. Sanctions**

**6.1** Failure to comply with the provisions of this Official Mexican Standard will be sanctioned in accordance with the Federal Law on Standards and Metrology, the Act Respecting Highways, Bridges and the Federal Transport System, the Federal Regulations on Motor Transport and Auxiliary Services, the

Regulations Governing Transit on Federal Highways, the Regulations Governing the Weight, Dimensions and Cargo Capacity of Transport Vehicles Permitted on Federal Highways and Bridges, Regulations Governing Surface Transport of Hazardous Materials and Residues, as well as other applicable legal regulations.

## 7. Monitoring

- 7.1 The Ministry of Transport and Communications, through the Director General of Federal Transport, is the authority empowered to monitor compliance with this Official Mexican Standard.

## 8. Bibliography

- 8.1 Act Respecting Highways, Bridges and the Federal Transport System. Published in the *Diario Oficial de la Federación*, December 22, 1993.
- 8.2 Federal Law on Standards and Metrology. Published in the *Diario Oficial de la Federación*, June 1, 1992.
- 8.3 Regulations Governing the Weight, Dimensions and Cargo Capacity of Transport Vehicles Permitted on Federal Highways and Bridges. Published in the *Diario Oficial de la Federación*, January 26, 1994.
- 8.4 Regulations Governing Transit on Federal Highways. Published in the *Diario Oficial de la Federación*, September 2, 1992.
- 8.5 Regulations Governing Surface Transport of Hazardous Materials and Residues. Published in the *Diario Oficial de la Federación*, April 7, 1993.
- 8.6 Federal Regulations on Motor Transport and Auxiliary Services. Published in the *Diario Oficial de la Federación*, November 22, 1994.
- 8.7 Agreement reforming and amending the Regulations governing Transit on Federal Highways. Published in the *Diario Oficial de la Federación*, March 29, 2000.

## 9. Concordance with International Standards

This Official Mexican Standard was written taking into account the characteristics and specifications of the existing vehicular parque, and it therefore is not necessarily congruent with any international regulations.

## 10. Entry into Force

This Official Mexican Standard will come into effect in accordance with point 11 of this same Standard, no fewer than 60 days following its publication in the *Diario Oficial de la Federación*.

## 11. Temporary Measures

**FIRST.-** For a period of 365 calendar days, beginning from the date of entry into force of this Official Mexican Standard, vehicles will be checked in a preventive manner, without the discovery of physical-mechanical defects infringing or limiting the vehicle's transit. Nevertheless, the motorist or permit holder must repair defects that are discovered, with the exception of the third temporary measure of this article.

**SECOND.-** After the 365 days referred to above, the Standard will apply, permanently and in accordance with the procedure set out in Appendix "A", Annex 1, observing the defects to be checked, included in clause 4.

**THIRD.-** The preventive verification alluded to in the First Temporary Measure will not be applicable for defects classified as SERIOUS in the evaluation table of clause 4, column four. Vehicles with those defects will be sanctioned, and their travel will be limited in accordance with point 4.21, the permit holder or driver being obliged to repair the defects and check the vehicle again, before it may be operated.

**FOURTH.-** While Verification Units are unavailable for the physical-mechanical evaluation of vehicles, verification will be conducted on a random basis, by the operatives available under the Ministry of Transport and Communications, through General Road Inspectors.

**FIFTH.-** Technical and administrative provisions that contradict this Official Mexican Standard are hereby abolished.

Mexico City, June 1, 2000.- The Undersecretary of Transport and President of the National Advisory Committee on Standardization of Surface Transport, **Aarón Dychter Poltolarek**. - Signature.

## APPENDIX "A"

### ANNEX 1

#### VERIFICATION PROCEDURE

**Step 1. Select the verification site (applicable for all types of vehicle).**

- 1.- Select a safe, flat place, away from the flow of traffic and able to support the weight of the vehicle. The site must have guidelines for the vehicle, and must follow applicable precautions, signals and safety measures.

**Step 2. Prepare the verification (applicable for all types of vehicle).**

- 1.- The inspector will deal with the vehicle's operator, permit holder or legal representative.
- 2.- Turn off the engine, and put the transmission into neutral. Apply the parking brake, and leave the ignition system off.

**Step 3. Check for hazardous materials and residues (applicable for all types of vehicle).**

#### EMBARCATION DOCUMENT/BILLS OF LADING

- 1.- Verify that the embarkation document indicates the type of hazardous material or residue being transported. The documents must be in an accessible and visible place.

#### LOGBOOK OF DRIVER'S HOURS OF SERVICE AND LOGBOOK OF DAILY VISUAL INSPECTION

- 1.- Verify that the logbook of daily visual inspection contains the information required in the corresponding Standard.
- 2.- The logbook of driver's hours of service is designed by the company, according to its needs.

#### PLACARDS

- 1.- Check for placards which indicate the kind of hazardous materials or residues being transported.

#### DRIPPING, SPILLING AND INSECURE LOAD

- 1.- Verify that the load has no spilling, dripping or is inadequately secured.

#### LABELS

- 1.- Verify that packaging and packing have labels which identify the risk class.

#### **Step 4. Verification of the front of the motor vehicle (applicable for all types of vehicle).**

##### MAIN HEADLIGHTS AND SIGNAL LIGHTS

- 1.- Verify that the colour of the lights is the authorized one and that it corresponds to the type, proper functioning, secure mounting and visibility distance; for this purpose, the main headlights must be white in colour, the turn signals and front hazard lights must be amber, the side signal and hazard lights must be amber, the rear signal and hazard lights must be red, and if they are separate from the brake lights, they should be amber, as per the Regulations Governing Transit on Federal Highways. (Do not use the flashers to verify the signal lights, as these may invalidate the operation of the signal lights).

##### WINDSHIELD WIPERS AND SPRAY JETS

- 1.- Verify their functioning properly. The vehicle must have two wipers, unless one can clean the driver's field of vision.

#### **Step 5. Verification of the left front of the motor vehicle (applicable for all types of vehicle)**

##### LEFT REAR WHEEL AND RIM

- 1.- Verify that there are no cracks, poorly seated closing rings, broken or missing belts, bent or broken screws or clamps and rims.
- 2.- Verify that there are no missing or expired screws and flared orifices.
- 3.- Verify in wedge type wheels that none of the wedges is broken or in the central area.
- 4.- Verify in wedge type wheels that there are no barrida clamps.

##### LEFT FRONT TIRE

- 1.- Verify that the tire pressure is correct (the pressure indicated by the manufacturer may vary  $\pm 15\%$ ), and that there are no cuts or projecting edges.
- 2.- Verify that the tires on the axle are not rebuilt.
- 3.- Verify the wear on the rolling surface, measuring the depth of the treads.
- 4.- Verify that there are no defects in the sides as a result of use or inadequate repairs.
- 5.- Verify that the tires do not have exposed cords.
- 6.- Verify that the tire does not have contact with any part of the vehicle.
- 7.- Verify that the axle has an appropriate tire for the type, design capacity and use to which it is put (indicated on the side of the tire).

**Step 6. Verification of the left fuel tank (applicable for all types of vehicle).**

## LEFT FUEL TANK

- 1.- Verify that the tank's support is the appropriate one, and that there are no leaks or other damage.
- 2.- Verify that it has a cap.
- 3.- Verify that there are no fuel leaks in the bottom of the tank.

## EXHAUST SYSTEM

- 1.- Verify mounting, leaks, exhaust in contact with fuel lines, air lines or electrical cables.

**Step 7. Verification of the rear part of the trailer.**

## AIR AND ELECTRICAL LINES

- 1.- Verify that the lines between the tractor trailer and the trailer do not rub on any part of the vehicle.
- 2.- Verify that the lines have sufficient play to allow the vehicle to turn, and the correct connection with the air lines.
- 3.- Verify that the lines are not tangled or incorrectly united.
- 4.- Verify that there are no air leaks.

**Step 8. Verification of the left rear of the motor vehicle and semi-trailer.**

## WHEELS, RIMS AND TIRES (applicable for all types of vehicle).

- 1.- Verify, as described in step 5.
- 2.- Verify that the tire pressure is acceptable, and that the inside tire of an axle with dual tires is in good condition.
- 3.- Verify that there are no objects between the dual tires on the axle (stones, wood, bottles, etc.).
- 4.- Verify that the dual tires on the axle do not touch each other or any part of the vehicle.

## FIFTH WHEEL

- 1.- Verify that there are no insecure mountings to the chassis or any missing or damaged pieces.
- 2.- Verify that there is no visible space between the upper and lower plates of the fifth wheel.
- 3.- Verify that the unhooking mechanism is correctly placed, and that the safety is engaged.

**KINGPIN**

- 1.- Verify that there are no cracks or missing screws in the fifth wheel plate.
- 2.- Verify that the kingpin is in good condition.

**SLIDING FIFTH WHEEL**

- 1.- Verify that the hook-up mechanism is closed properly (gears completely hooked to the rail), that there are no damaged or missing parts, the rails of the chassis make no contact with the base of the fifth wheel.
- 2.- Verify front and rear stops, missing or damaged.

**LIGHTS (applicable for all types of vehicles)**

- 1.- Verify that the colour of the lights is the authorized one and corresponds to the type and the proper functioning of the brake lights, rear and signal lights, in accordance with the Regulations Governing Transit on Federal Highways. As described in step 4 of this procedure.

**Step 9. Verification of the left side of the trailer.****CHASSIS AND BODY**

- 1.- Verify that there is no wear from corrosion, missing crossmembers, cracks in the chassis, missing, cracked or defective parts.

**CONDITION OF HOSES**

- 1.- Verify that there are no air leaks in the suspension hoses for dual tire axles.

**TRAILER AND SEMI-TRAILER**

- 1.- Verify that in the upper structure there are no expired techos (roof panels?) and bent posts, cracks or inoperable restraints.
- 2.- Verify that in the lower structure there are no breaks with sunken spots in the floor, rail or crossmembers, or broken or missing restraints in the posts next to cracks.
- 3.- Verify in the floor crossmembers that there are no breaks far from sunken spots below the lower rail, or broken floor where the load juts out.

**SECURING THE LOAD**

- 1.- Verify, when the load is visible, that the securing devices used are adequate. When accessible, examine also inside the trailers to ensure that the load is duly secured.
- 2.- Verify that the devices used to secure the load are in good condition and are the right size.

- 3.- Verify that there are no deformations in the ties and cracks in the anchor points.

**Step 10. Verification of the rear wheels of the trailer.**

## WHEELS, RIMS AND TIRES

- 1.- Verify, as described in step 8.

## SLIDING SUSPENSION

- 1.- Verify that there is neither damage nor missing pieces or sliding from its position.
- 2.- Verify that the closing mechanism's gears are secured to those of the rail secured to the chassis.
- 3.- Verify that the secondary pin is in the closed position and is secured.

**Step 11. Verification of the rear part of the trailer.**

## BRAKE LIGHTS, WARNING LIGHTS, GAUGE LIGHTS AND OVEREXTENDED LOAD LIGHTS

- 1.- Verify that the colour is the authorized one, depending on the type of lights, and that they function correctly. Ask the driver to activate them.

Red coloured brake lights.

White coloured backing lights.

Amber coloured front gauge lights and marker lights.

Red coloured rear gauge lights and marker lights.

Red overextended load light.

## LOAD SECURING

- 1.- Verify as described in step 9.
- 2.- Verify in accordance with the defects classification table; also ensure that the doors are secured in the post holes.
- 3.- Verify that the rear doors are duly closed.

**Step 12. Verification of the right rear wheels of the trailer.**

## WHEELS, RIMS AND TIRES

- 1.- Verify, as described in step 8.

## SLIDING SUSPENSION

- 1.- Verify, as described in step 10.

**Step 13. Verification of the right side of the trailer.**

## CHASSIS AND BODY

- 1.- Verify, as described in step 9.

## TRAILER AND SEMI-TRAILER BODY

- 1.- Verify, as described in step 9.

## LOAD SECURING

- 1.- Verify, as described in step 9.

## SPARE TIRE

- 1.- Verify that the mounting support for the spare tire is firmly secured to the chassis, and that it has the necessary elements for properly securing the tire.

**Step 14. Verification of the right rear part of the trailer (as per step No. 8).**

## WHEELS, RIMS AND TIRES

- 1.- Verify, as described in step 8.

## SLIDING FIFTH WHEEL AND KINGPIN

- 1.- Verify, as described in step 8.

**Step 15. Verification of the right tank area (applicable for all types of vehicle).**

## RIGHT TANK

- 1.- Verify, as described in step 6.

## EXHAUST SYSTEM

- 1.- Verify, as described in step 6.

**Step 16. Verification of the right front part of the motor vehicle (applicable for all types of vehicle).**

## WHEELS, RIMS AND TIRES

- 1.- Verify, as described in step 5.

**Step 17. Verification of the second trailer.**

If a second trailer is hooked up, repeat all the above verification steps having to do with wheels, tires, chassis, suspension, brakes, fifth wheel, lights, chassis, body and load securing. The motor must be turned on and off.

**SAFETY DEVICES-COMplete TRAILERS AND CONVERTERS (DOLLIES).**

- 1.- Verify that the vehicle has chains, cords, cables, brake wedges, flanges and other devices, and that there are no missing pieces and devices which are insufficient to secure the load. Verify, as well, that there is not excessive play between the pintle hook and the pintle eye.

**Step 18. Verification of the low air pressure device (applicable for all types of vehicle).**

- 1.- The ignition switch must be open for this test. Tell the vehicle's operator to reduce the air pressure by pumping the foot valve until the low air pressure device activates. Observe the air pressure gauge on the dashboard. The low air pressure device activates when at least half of the compressor pressure, normally 379.4 kPa (55 p.s.i.) or more is reached.

**Step 19. Verification of steering wheel play (applicable for all types of vehicle).**

- 1.- For vehicles equipped with hydraulic steering, the motor must be running to verify steering wheel play.
- 2.- Turn the steering wheel until the wheels begin to move, and place a mark on the steering wheel to set a reference point.
- 3.- Turn the steering wheel in the opposite direction, until the wheels again begin to move, and place a mark on the steering wheel in relation to this reference point.
- 4.- Measure the distance between the two reference points. The permissible play varies according to the diameter of the steering wheel.
- 5.- Compare this measurement with the table shown in point 4.12.

**Step 20. Test the range of air loss (applicable for all types of vehicle).**

- 1.- If air leaks are discovered at any point:
  - 1.1.- Verify the vehicle's air loss range.
  - 1.2.- Ask the driver to start the vehicle, and make sure that the brakes are off.
    - 1.3.- Check the air pressure gauge on the dashboard. Have the driver pump the pressure until it reads 551.8 kPa (80 p.s.i.) the compressor does not activate until the pressure drops to a certain level. At close to 551.8 kPa (80 p.s.i.), most compressors should work. With the engine running and the pressure between 551.8 kPa (80 p.s.i.) and 620.7 kPa (90 p.s.i.), ask the driver to fully apply the brakes.
    - 1.4.- Check the pressure gauge after the initial application of the brakes. The pressure should increase or remain stable. A fall in pressure indicates air leakage in the brake system.

**Step 21. Verification of the steering rod (applicable for all types of vehicle).**

Tell the driver to open the cofre and turn the steering wheel to more easily verify the most important components.

## STEERING SYSTEM (BOTH SIDES)

- 1.- Verify that there are no missing, bent or damaged components.
- 2.- Verify that there are no missing pieces or screws in the gear box.
- 3.- Verify the movement of the steering rod's Pitman Arm in the gear box.

Verify that there are no missing screws, nuts or any repair welds in the steering system's components.

- 4.- Verify the joints' movement.

## SUSPENSION (BOTH SIDES)

- 1.- Verify that there is no damage or misalignment, missing springs or grilletes (ties?), welds or breaks, insecure chassis bolts and missing or broken U bolts.
- 2.- Verify that the axle does not have damaged parts and signs of misalignment.

## AXLE

- 1.- Verify that there are no cracks and misalignment.

## CHASSIS OR FRAME ASSEMBLY

- 1.- Verify that there are no cracks, expiry, missing restraints or any defect that may weaken or collapse the chassis or frame.

## BRAKES (BOTH SIDES)

(When the following applies, according to the year of manufacture and/or model)

- 1.- Verify that it has drums, shoes, linings, lines, brake chambers, brake mountings, push rods and adjusters in good operating condition and free of grease or oil. Verify the s-cam.
- 2.- Verify that there are no air leaks around the components or lines.
- 3.- With the brakes released, mark the push rod where it enters the brake chamber. Mark the rods on both sides. Take all the measurements afterwards.
- 4.- Verify that the spacing adjusters are the same size (from the centre of the s-cam to the centre of the pintle eye), and that the brake chambers in the steering rod are the same size.

**Step 22. Verification of tractive axles 2 and 3 (applicable for all types of vehicle).**

**SUSPENSION (BOTH SIDES)**

- 1.- Verify that there is no corrosion, cracked or missing crossmembers, cracks in the chassis, missing or inoperable system parts.

**BRAKES (BOTH SIDES)**

- 1.- Verify the brakes, as described in step 21.
- 2.- With the brakes released, mark the push rod in the chambers of the s-cam.

**Step 23. Verification of semi-trailer axles 4 and/or 5.****SUSPENSION (BOTH SIDES)**

- 1.- Verify, as described in step 21.

**BRAKES (BOTH SIDES)**

- 1.- Verify the brakes, as described in step 21.
- 2.- With the brakes released, mark the push rod in the chambers of the s-cam.

**Step 24. Verification of brake adjustment (applicable for all types of vehicle).****INSTRUCTIONS TO THE DRIVER**

- 1.- Tell the driver to completely apply the service brakes, and to keep them in this position.
- 2.- Make sure that the pressure is between 620.7 kPa (90 p.s.i.) and 689.7 kPa (100 p.s.i.) (it may be necessary to start the engine in order to raise the air pressure).

**MEASURE THE PUSH ROD'S DISPLACEMENT (ALL BRAKES)**

- 1.- With the brakes applied, move from the front to the rear (or from the rear to the front) of the vehicle, and measure the travel distance of the push rod in each chamber.
- 2.- Again, listen for possible air leaks.
- 3.- Note each rod measurement, and compare against the specifications given in "Brake adjustment limits" in point 4.14.

**VERIFICATION OF ELECTRICAL BRAKES**

- 1.- Apply the manual control without applying the tractor trailer's service brake.

**Step 25. Verification of the tractor trailer's safety system, both the safety valve and emergency brakes.**

**TRACTOR TRAILER SAFETY VALVE**

- 1.- Instruct the driver to release the emergency brakes by pushing the dashboard valves.
- 2.- Instruct the driver to leave the cabin, disconnect both air lines, and put them on the chassis. Once the lines are disconnected, the air in the emergency line should close almost immediately at around 413.8 kPa (60 p.s.i.) or 482.8 kPa (70 p.s.i.). If air continues to escape below 137.9 kPa (20 p.s.i.), the tractor trailer's safety valve is defective.
- 3.- After cutting the air from the supply line, instruct the driver to return to the cabin and apply the emergency brakes. Verify that the air does not escape from the service air connectors. If air flows from the service line, the tractor trailer's safety valve is defective.

**EMERGENCY RELAY VALVE**

- 1.- While the lines are disconnected from the trailer, verify the glad hands connection in the trailer, and ensure that there are no air leaks. A leak in the service lines indicates a defect in a line. Verify the emergency relay valve. Ask the driver to connect the air lines and load the semi-trailer.

**Step 26. Verification of the movement of the fifth wheel.****PREPARE THE VEHICLE AND DRIVER**

- 1.- Tell the driver that he will check the play of the fifth wheel by removing the blocks and applying the trailer's brakes.
- 2.- Verify that the trailer's brakes are applied and that the blocks are removed.
- 3.- Instruct the driver to start the engine and gently move the tractor trailer forward and backward. While he does this, observe the movement between the fifth wheel components. If the movement is excessive, instruct the driver to apply pressure on the rear of the pintle hook, pulling it and keeping the vehicle in this position.
- 4.- Tell the driver to apply the tractor trailer's brakes, turn off the engine and place the transmission into neutral.
- 5.- Place the blocks back onto the wheels. Mark the pintle hook's plate, the pintle hook itself and the support.
- 6.- Remove the blocks.
- 7.- Instruct the driver to start the engine and to release the tractor trailer's brakes and put pressure on the front of the pintle hook by its support. Apply the brakes, turn off the engine, and place the transmission into neutral.
- 8.- Replace the blocks, and take measurements.

**Step 27. Verification of the bus. (in addition to steps 1, 2, 3, 4, 5, 6, 8, 15, 16, 18, 19, 20, 21, 22, 24 and 27).**

**Step 28. Verification of the passenger area.**

## STANDING LINE

- 1.- Look over the standing line, which must be a contrasting colour (usually white), and be just behind the driver's seat. No one may stand in front of this line and restrict the driver's field of vision to his right mirror and the door. Aisle seats which are permanently fixed to the area around the stairs are permitted as long as their passengers do not interfere with the driver's being able to operate the bus safely.

## STANDING LINE SIGN

- 1.- Locate the sign, which must be near the front of the bus, reminding the passengers that they must remain behind the standing line when the bus is in motion.

## FLOOR

- 1.- Make sure that the floor does not have holes or openings which may pose a danger to the passengers.

## SEATS

- 1.- Ensure that the seats are firmly secured to the vehicle. No seat is allowed in the aisle, unless it may be folded and allow a free path when it is not occupied.

## WINDOWS

- 1.- Ensure that the windows are made of laminated safety glass.
- 2.- Every emergency window must be marked as an emergency exit, and must be operable as an emergency exit.

## EMERGENCY DOORS

- 1.- If a vehicle is equipped with these, ensure that every door has a sticker or some written indication that it is an emergency exit, and ensure that it can be operated as such.

## ACCESS TO THE EMERGENCY EXIT

- 1.- Ensure that there are no obstructions blocking the aisles or access to the emergency exits.

Depending on the type of service, ensure that it has:

- 1.- Seats
- 2.- Restroom.
- 3.- Interior lights.
- 4.- Air conditioning.

- 5.- Heating.
- 6.- Sound system.
- 7.- Television.
- 8.- Videocassette machine.
- 9.- Cafeteria service.
- 10.- Curtains.

**Step 29. Verification of the driver's compartment.**

DRIVER'S SEATBELT

- 1.- The driver's seat must be equipped with a seatbelt which is used while the vehicle is in operation.

EMERGENCY EQUIPMENT

- 1.- Check to see if there are any emergency warning devices and fire extinguishers.

**Step 30. Verification of the exhaust system.**

- 1.- Look for the location of the exhaust. Gas engine buses must have them up to or within 15.2 cm (6") of the bus's rear. Diesel buses must have them either up to or within 38.0 cm (15") of the bus's rear or behind all doors and windows which are designed to open, except for emergency exit windows.

**Step 31. Evaluation of the verification (applicable for all types of vehicle).**

DOCUMENTATION

- 1.- On the appropriate form, note the evaluation of the systems or mechanical components which limit the vehicle's transit (see appendix "A", figure 22).

**TABLES OF COMPLEMENTARY SPECIFICATIONS  
FOR VERIFICATION**

**DEFECT CLASSIFICATION TABLE**

**Total size of the defect shall not exceed the following tolerances:**

Section Size	Tolerance
10.1 cm (4")	Greater than 1.9 cm (3/4")
7.5 cm (3")	Greater than 1.6 cm (5/8")
5 cm (2")	Greater than 1.0 cm (3/8")

4.5 cm (1 3/4")	Greater than 1.0 cm (3/8")
-----------------	----------------------------

**NOTE:** All ruptures, burns and/or perforations around the belt are added to the width of the belt for measuring length. But a defect is added, regardless of the width specification. Belts that do not have the original joints or mountings are not allowed.

STEERING PLAY MUST NOT EXCEED THE FOLLOWING LIMITS

Steering Wheel Diameter	Manual System	Servo Steering System
40.6 cm (16")	5.1 cm (2")	11.4 cm (4 1/2")
46.0 cm (18")	5.7 cm (2 1/4")	12.0 cm (4 3/4")
50.8 cm (20")	6.3 cm (2 1/2")	13.3 cm (5 1/4")
55.9 cm (22")	7.0 cm (2 3/4")	14.6 cm (5 3/4")

**SPECIFICATIONS FOR CHECKING BRAKES.  
CLAMP RING BRAKE CHAMBER.**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
6	11.4 cm (4 1/2")	3.2 cm (1 1/4")
9	11.4 cm (4 1/2")	3.5 cm (1 3/8")
12	14.4 cm (5 11/16")	3.5 cm (1 3/8")
16	16.2 cm (6 3/8")	4.4 cm (1 3/4")
20	17.2 cm (6 25/32")	4.4 cm (1 3/4")
24	18.3 cm (7 7/32")	4.4 cm (1 3/4")
30	20.5 cm (8 3/32")	5.1 cm (2")
36	22.9 cm (9")	5.7 cm (2 1/4")

**NOTE:** Brakes that are at the adjustment limit are not considered in violation.

**LONG STROKE CLAMP RING BRAKE CHAMBER**

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
16	16.2 cm (6 3/8")	5.1 cm (2")
20	17.2 cm (6 25/32")	5.1 cm (2")
24	18.3 cm (7 7/32")	5.1 cm (2")

24*	18.3 cm (7 7/32")	6.3 cm (2 1/2")
30	20.5 cm (8 3/32")	6.3 cm (2 1/2")

**NOTE:** For maximum three stroke chamber 24 types.

#### PISTON ROD BRAKE CHAMBER

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
30	16.5 cm (6 1/2")	6.4 cm (2 1/2")

#### BOLT TYPE BRAKE CHAMBER

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
A	17.7 cm (6 15/16")	3.5 cm (1 3/8")
B	23.3 cm (9 3/16")	4.4 cm (1 3/4")
C	20.5 cm (8 1/16")	4.4 cm (1 3/4")
D	13.3 cm (5 1/4")	3.2 cm (1 1/4")
E	15.8 cm (6 3/16")	3.5 cm (1 3/8")
F	27.9 cm (11")	5.7 cm (2 1/4")
G	25 cm (9 7/8")	5.0 cm (2")

#### REVOLVING TYPE BRAKE CHAMBER

TYPE	OUTSIDE DIAMETER	MAXIMUM BRAKE ADJUSTMENT
9	10.9 cm (4 9/32")	3.9 cm (1 1/2")
12	11.2 cm (4 13/16")	3.9 cm (1 1/2")
16	13.8 cm (5 13/32")	5.1 cm (2")
20	15.1 cm (5 15/16")	5.1 cm (2")
24	16.3 cm (6 13/32")	5.1 cm (2")
30	17.9 cm (7 1/16")	5.7 cm (2 1/4")
36	19.4 cm (7 5/8")	7.0 cm (2 3/4")
50	22.5 cm (8 7/8")	7.6 cm (3")

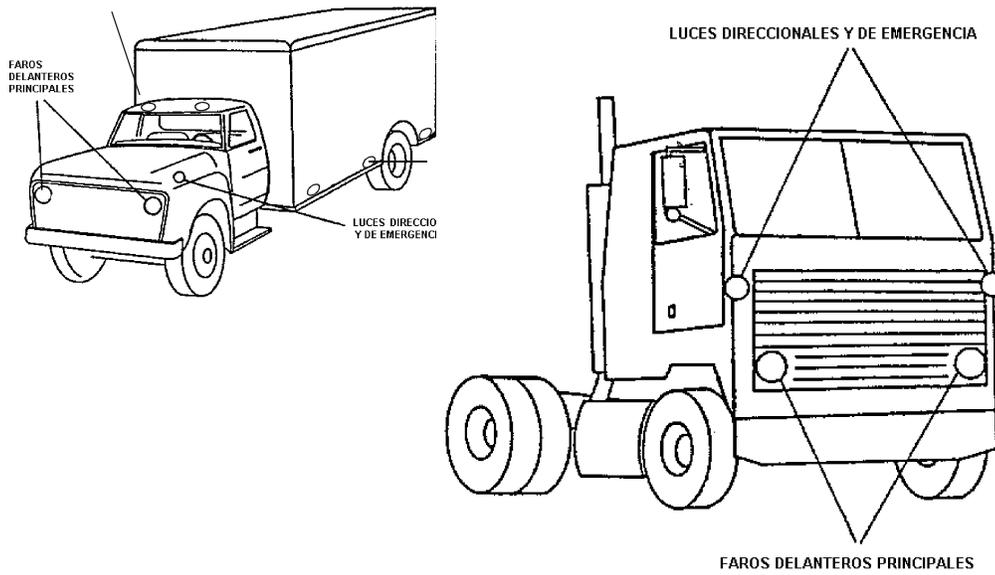
**DD-3 BRAKE CHAMBER**

<b>TYPE</b>	<b>OUTSIDE DIAMETER</b>	<b>MAXIMUM BRAKE ADJUSTMENT</b>
30	20.6 cm (8 1/8")	5.7 cm (2 1/4")

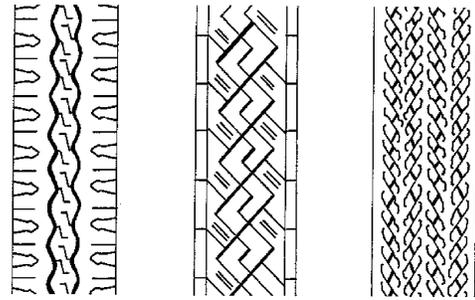
**NOTE:** This chamber has three air chambers, and it is found in automobiles.

APPENDIX "A".

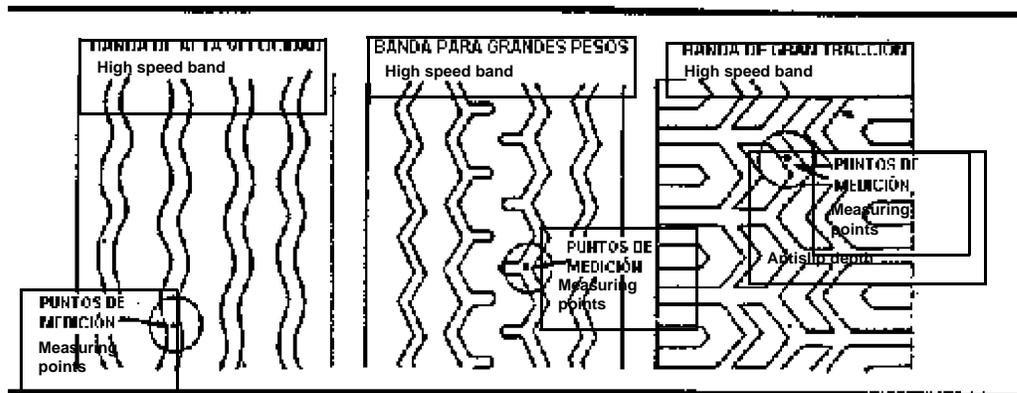
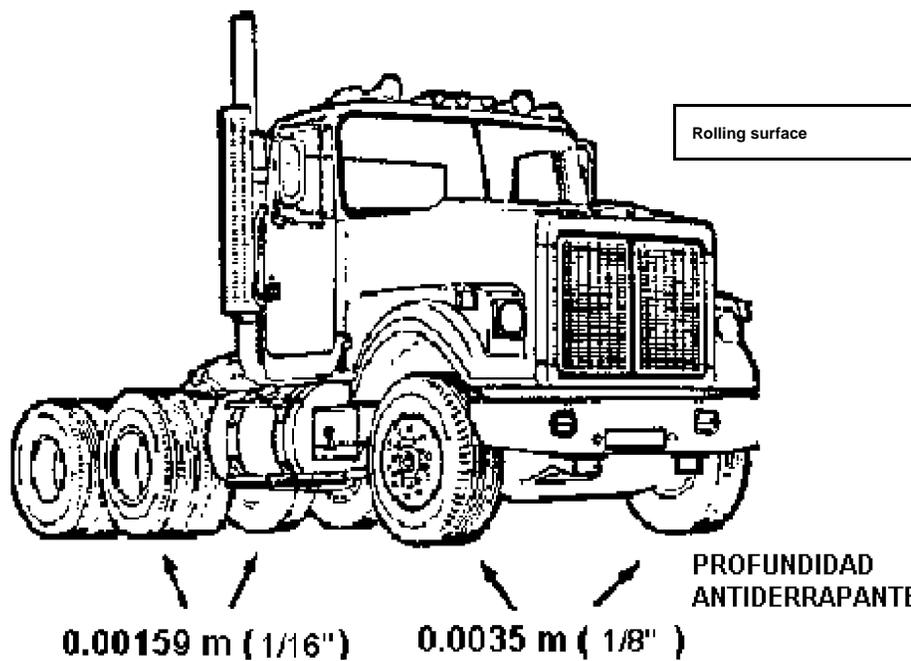
FIGURE 1. LIGHT SYSTEM  
(Lamps and Lights)



APPENDIX "A".  
FIGURE 2. TIRES



SUPERFICIE DE RODAMIENTO

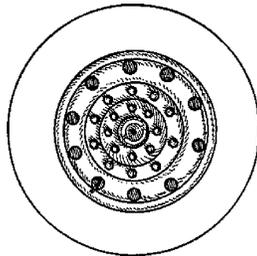


PROFUNDIDAD ANTIDERRAPANTE ENTRE COSTILLAS Y BLOQUES DE LA BANDA DE RODAMIENTO  
Antislip depth between ribs and wear bars of rolling band



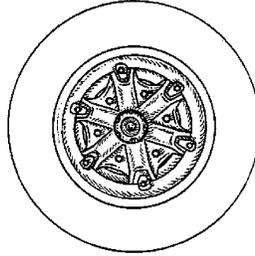
APPENDIX "A".

FIGURE 3. WHEELS AND RIMS



RUEDAS TIPO DISCO

Disk wheels



RUEDAS TIPO RAYO  
(ARTILLERIA)

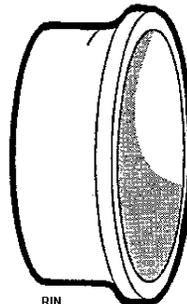
Wedge type wheels (bud)



ANILLO DE CIERRE  
LATERAL



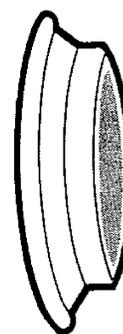
EXTENSIÓN DE RIN



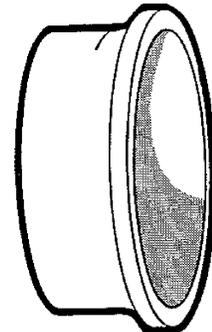
RIN



ANILLO DE CIERRE



CUBIERTA DE RIN



RIN

Side closing ring

Rim extension

Rim

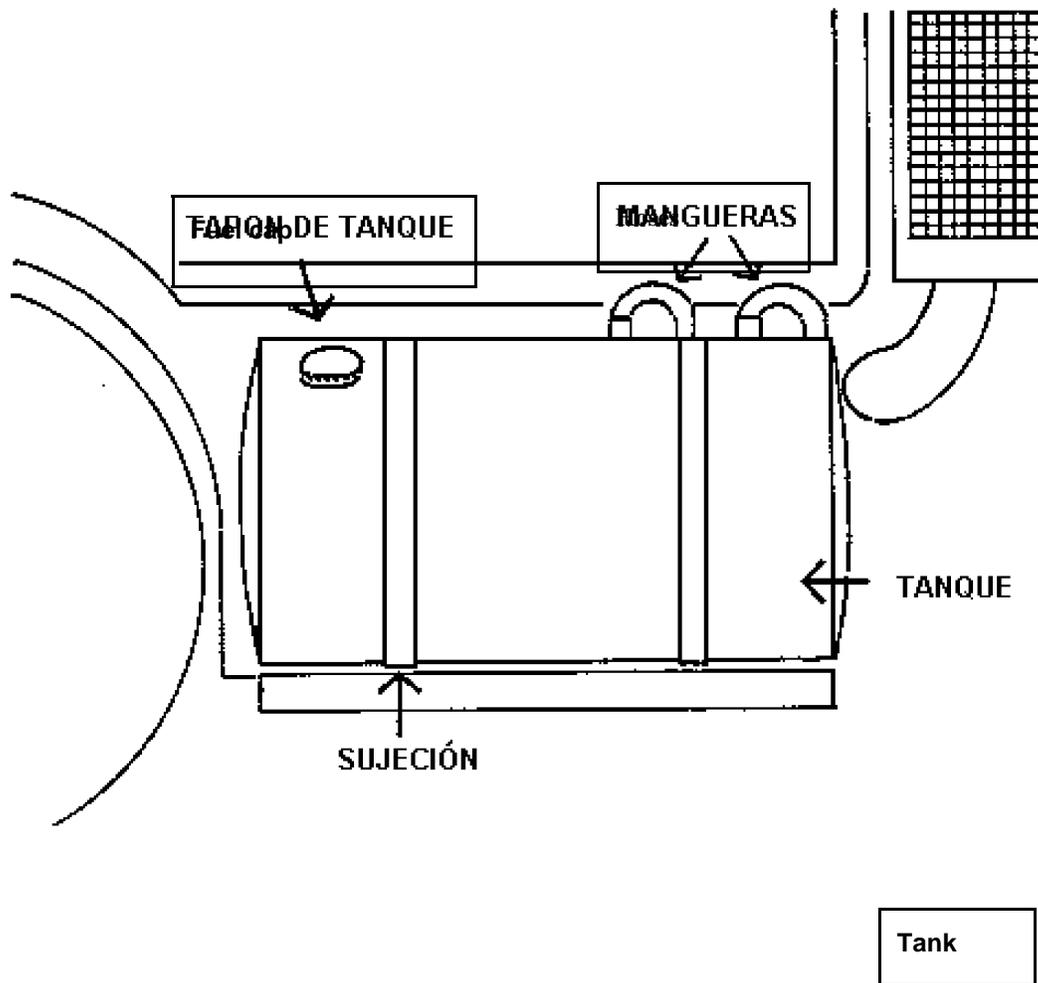
Closing ring

Rim cover

Rim

APPENDIX "A".

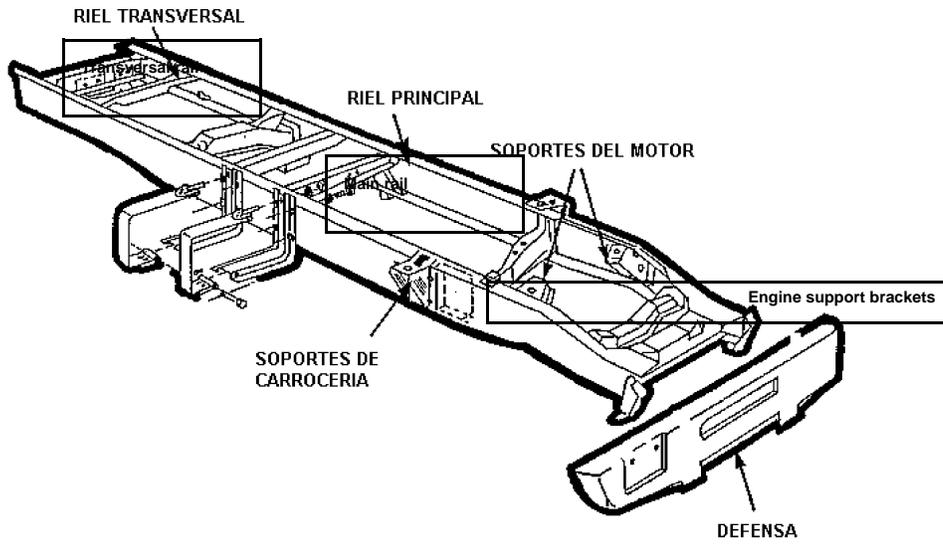
FIGURE 4. FUEL SYSTEM



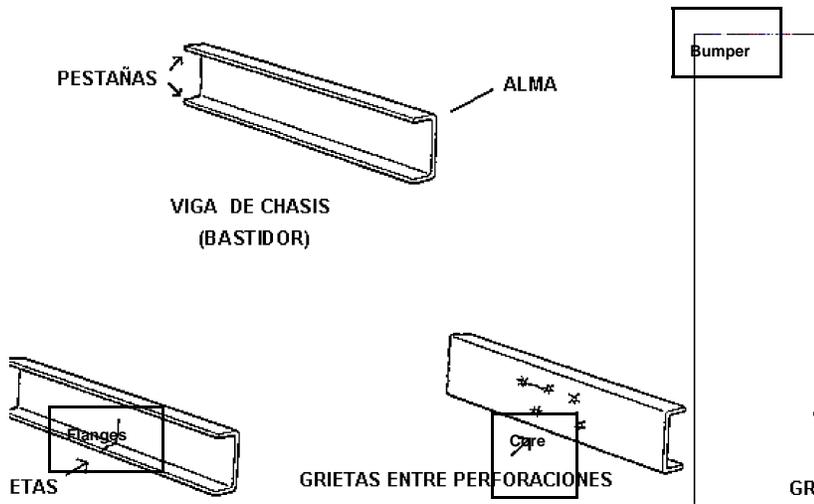
**Straps**

APPENDIX "A".

FIGURE 5. CHASSIS OR FRAME



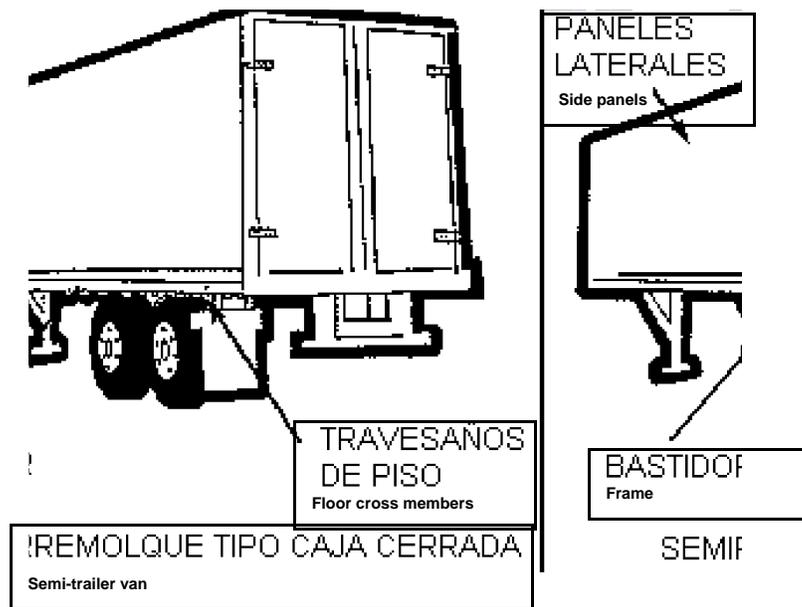
Body support brackets



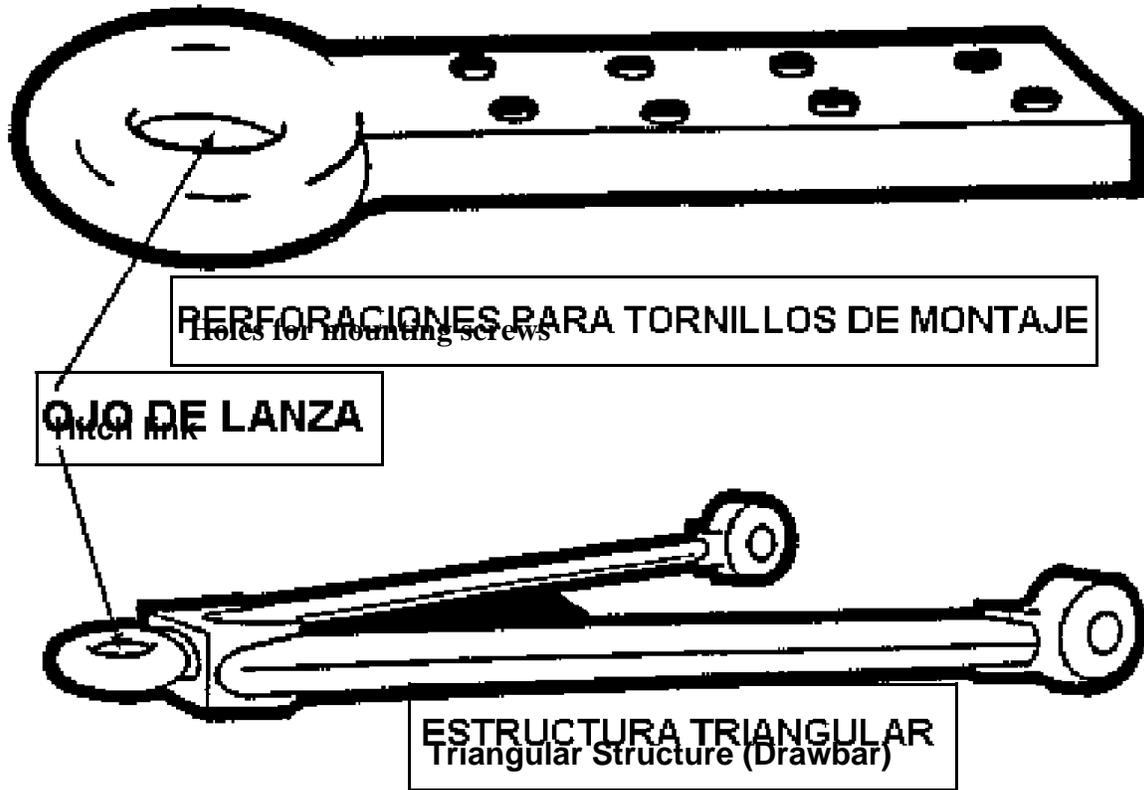
Chassis beam (frame)

Cracks

Cracks between holes

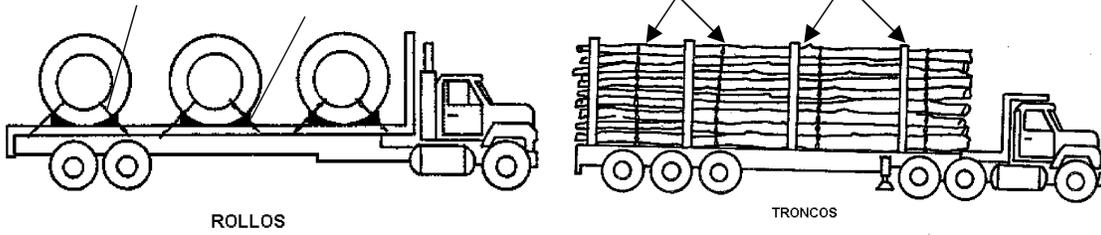


APPENDIX "A".  
FIGURE 6. TRACTION BAR



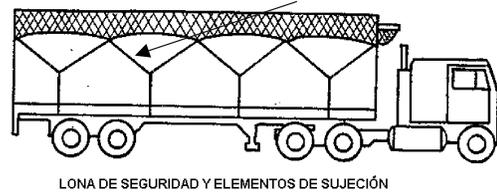
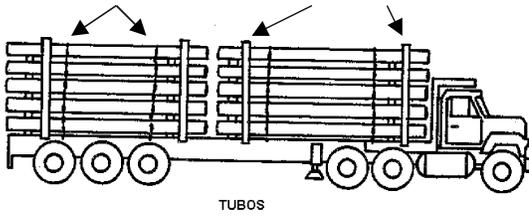
APPENDIX "A".

FIGURE 7. LOAD SECURING



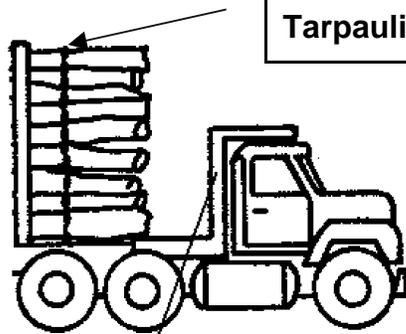
Rolls

Logs



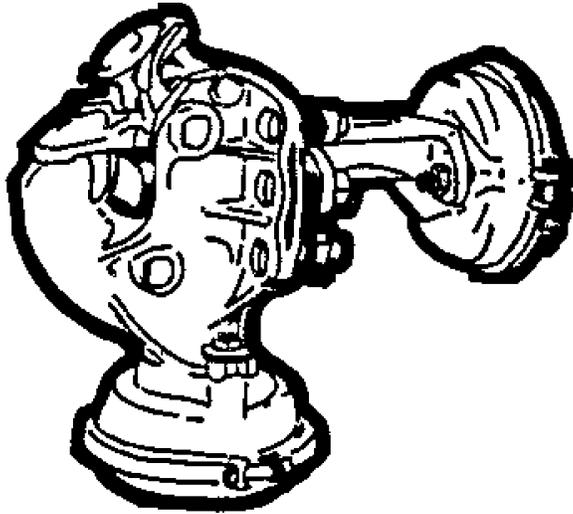
Pipes

Tarpaulin and securing

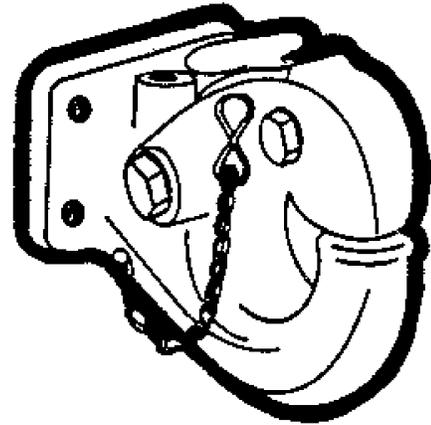


**Headache rack  
(cabin protection)**

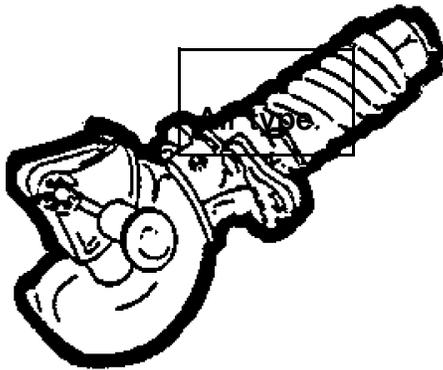
APPENDIX "A".  
FIGURE 8. PINTLE HOOK OR HITCH



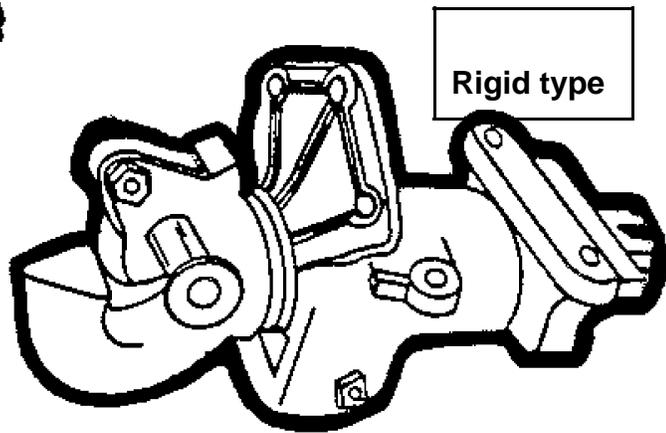
DE AIRE



RÍGIDO



RESORTE



GIRATORIO

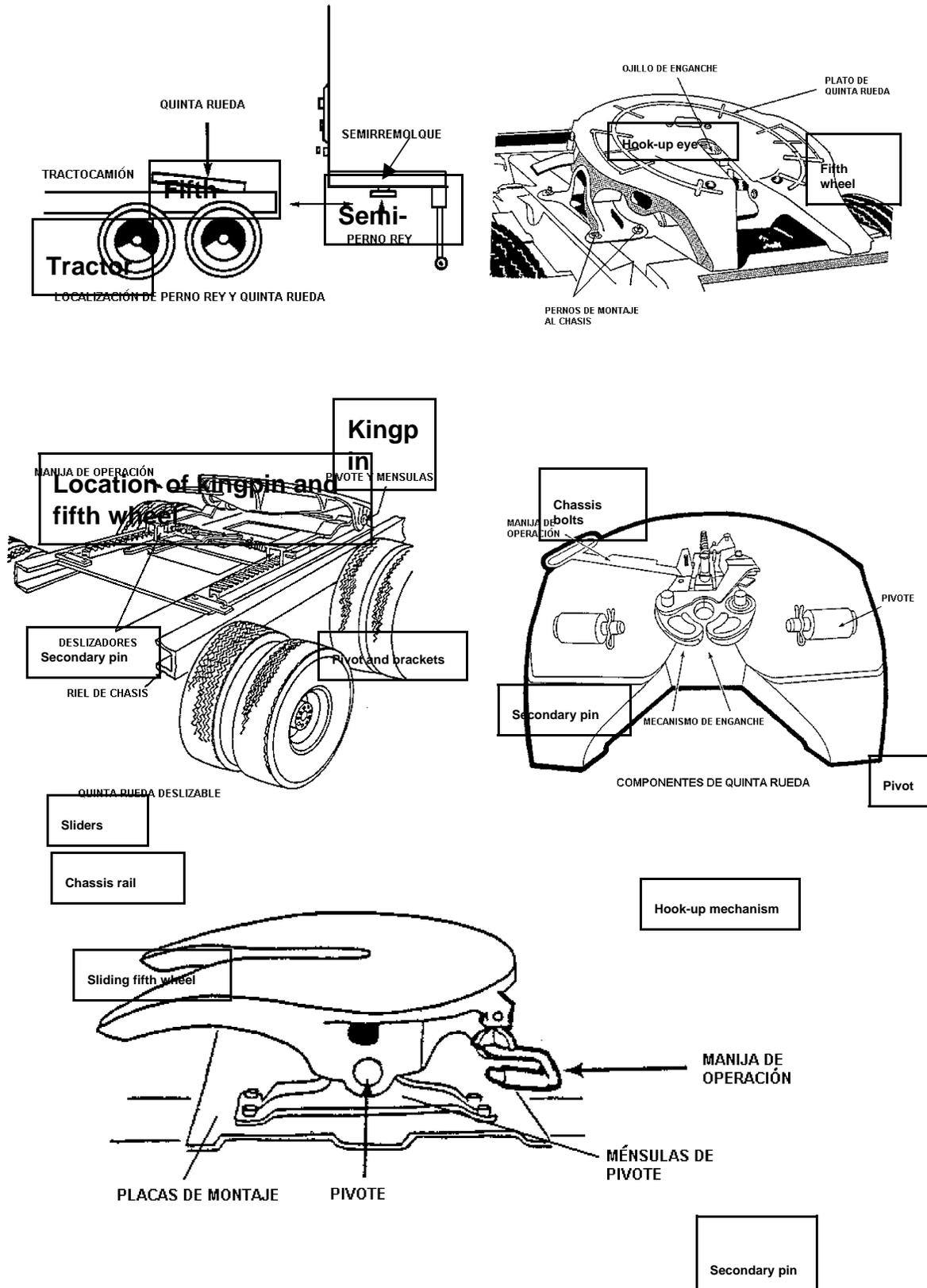
Rigid type

**Spring type**

**Revolving**

APPENDIX "A".

FIGURE 9. KINGPIN AND FIFTH WHEEL COUPLING SYSTEM



Fifth wheel components

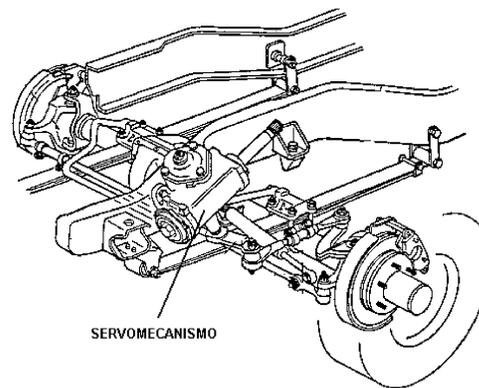
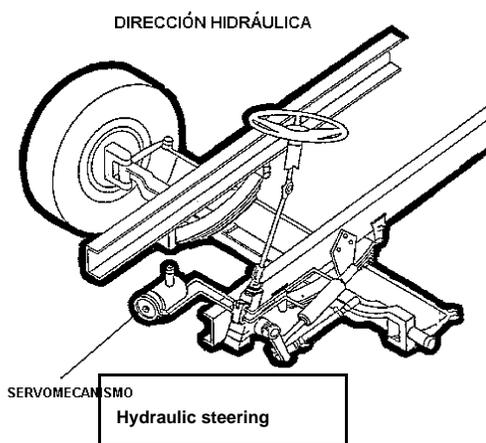
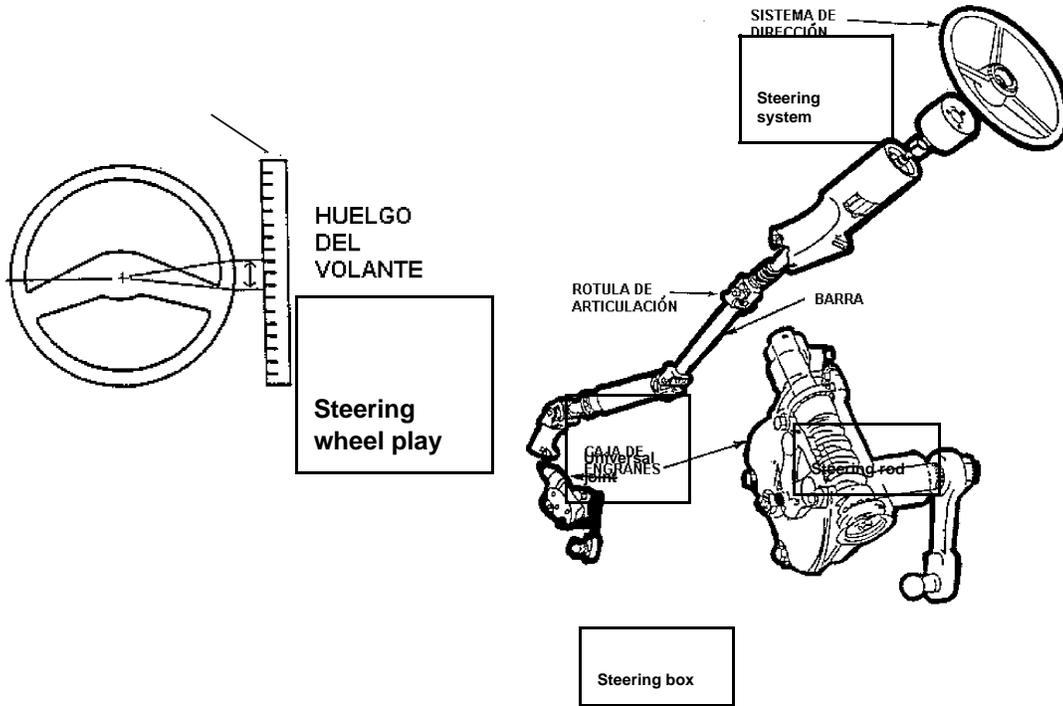
Mounting plates

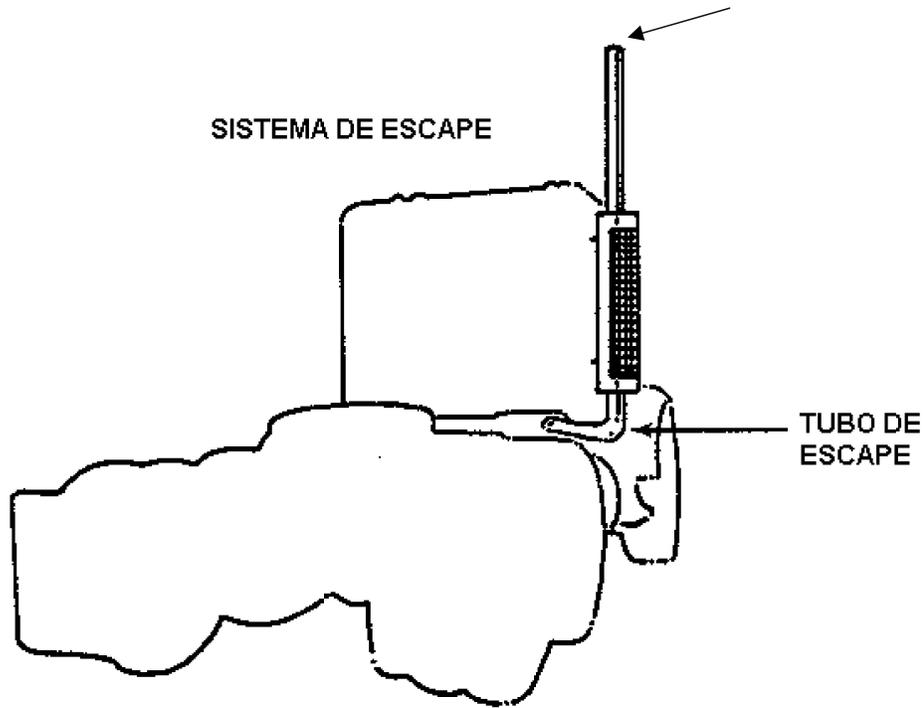
Pivot

Pivot  
Brackets

APPENDIX "A".

FIGURE 10. STEERING SYSTEM





Servo steering

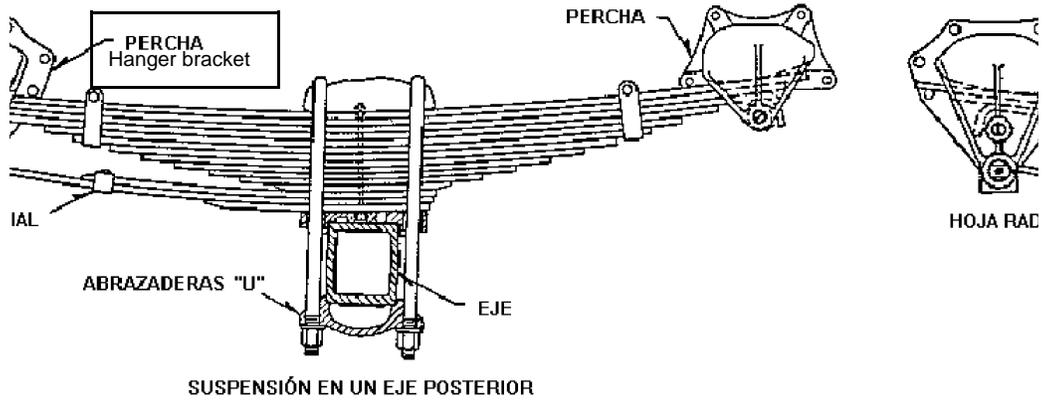
Servo mechanism

APPENDIX "A".

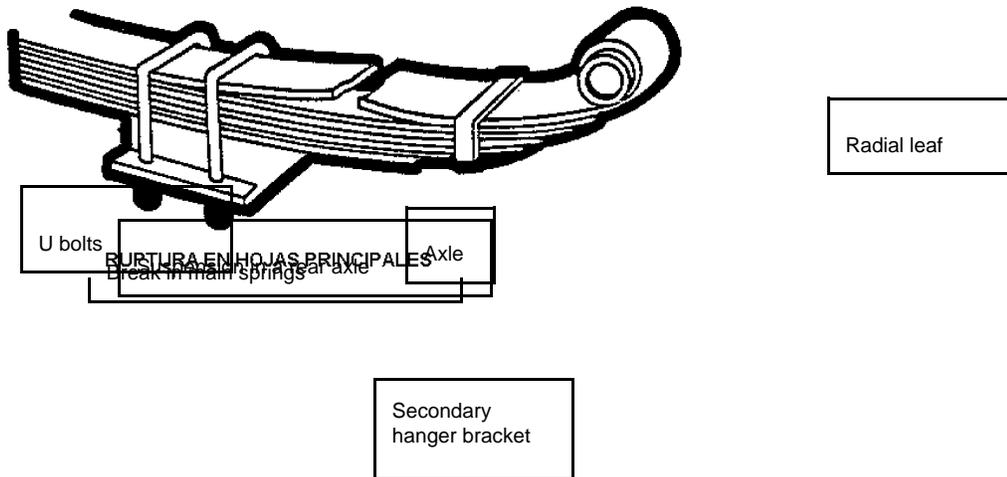
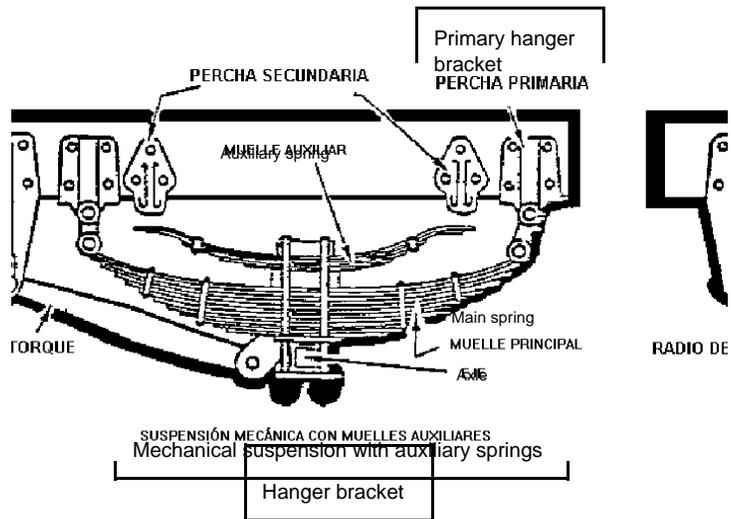
FIGURE 11 EXHAUST SYSTEM

Exhaust system

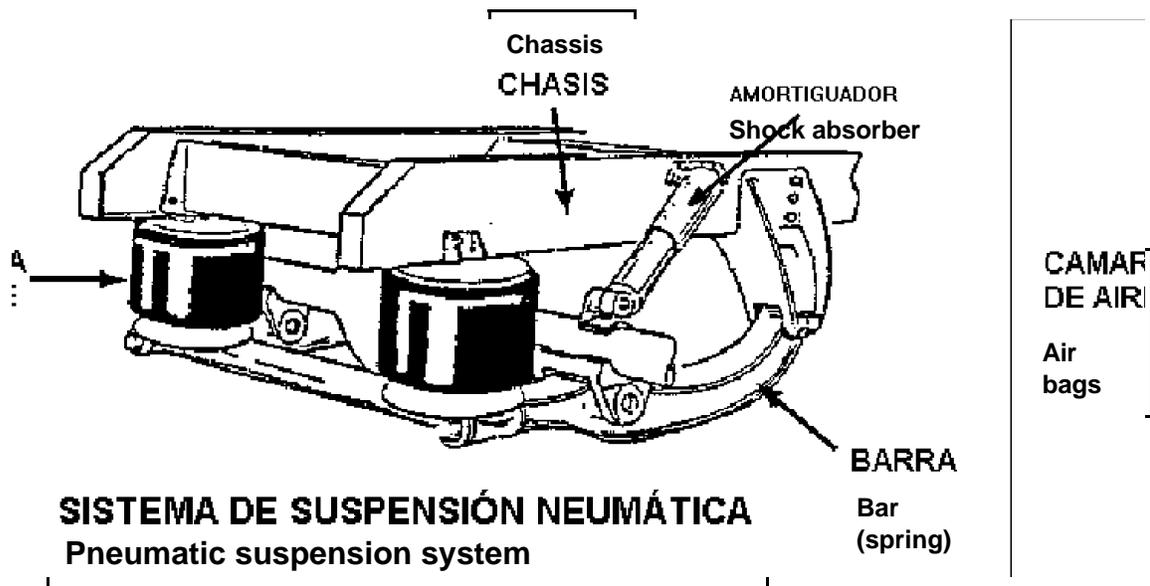
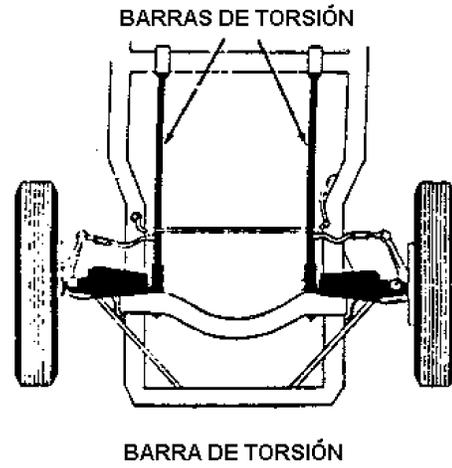
Exhaust pipe (stack)

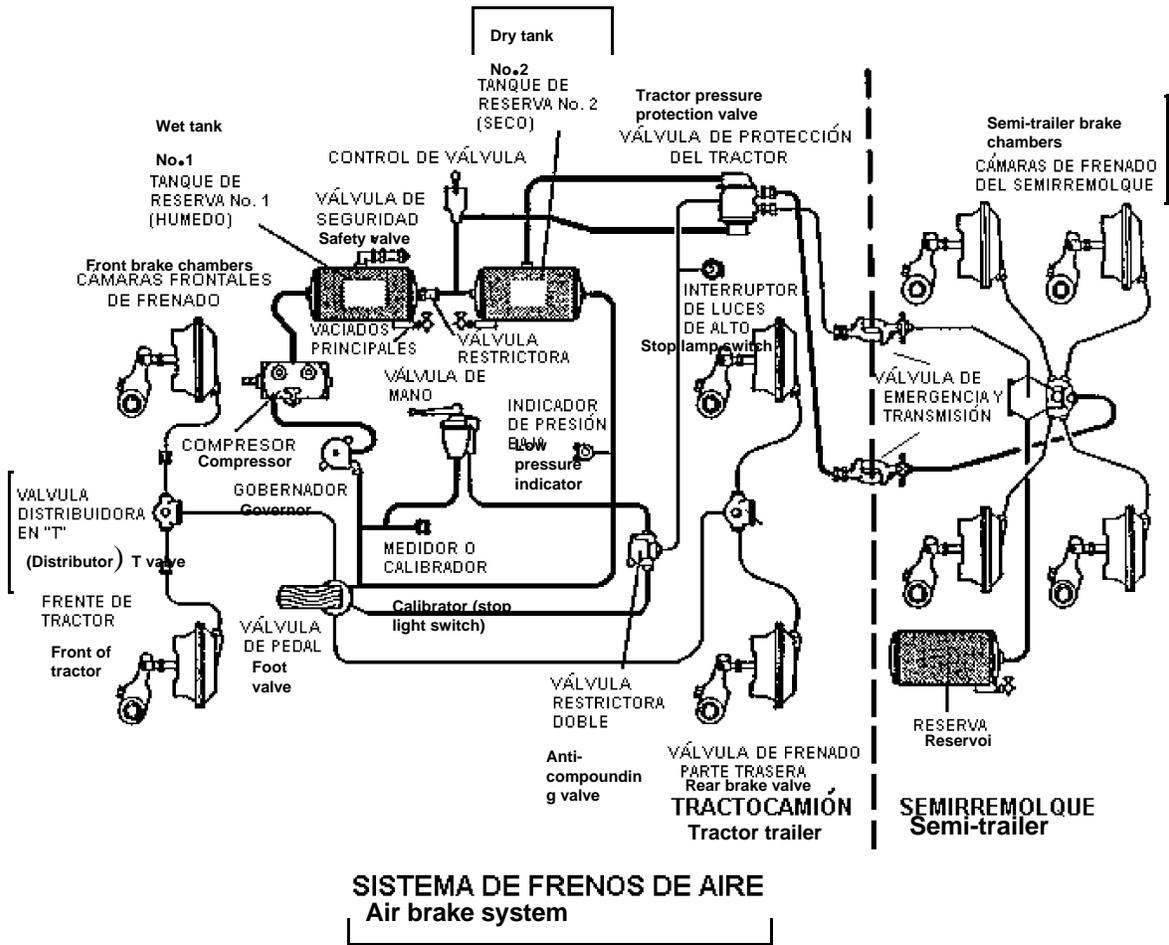


APPENDIX "A".  
FIGURE 12. MECHANICAL  
SUSPENSION SYSTEM



Torsion bar





**Torsion bars**

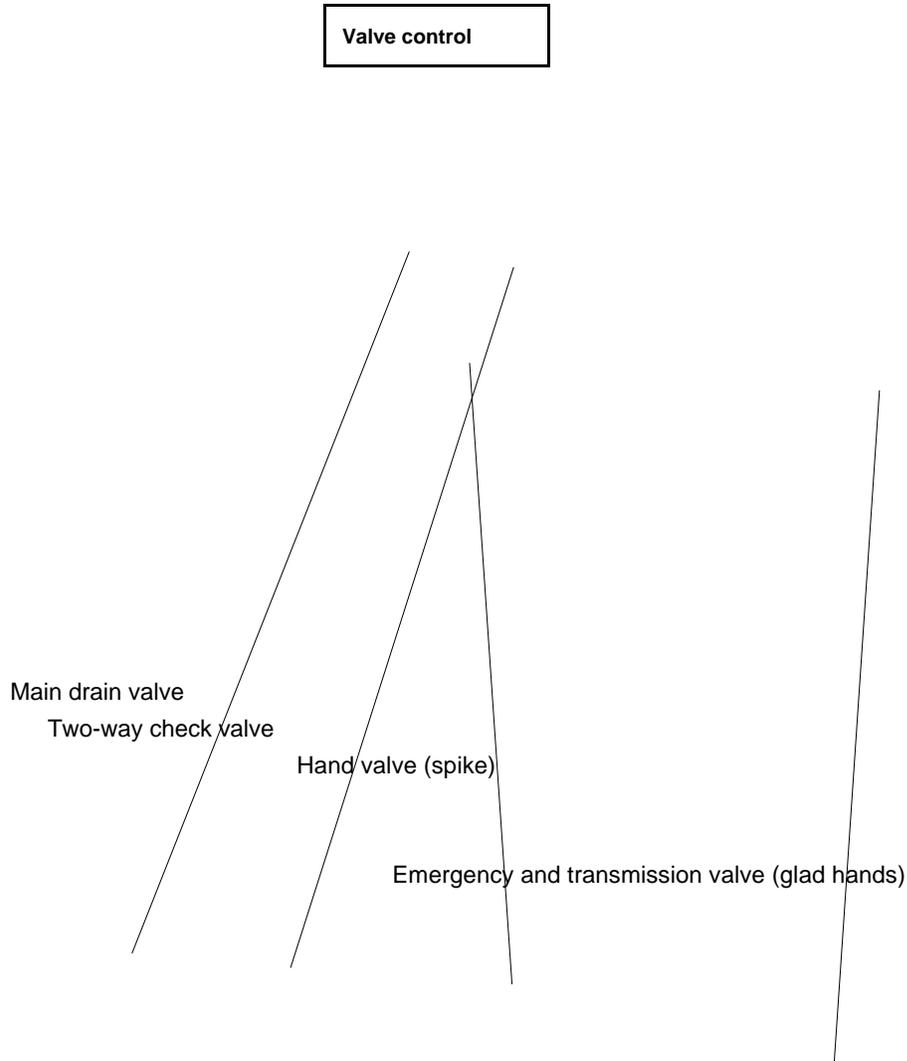
**Torsion bar**

**APPENDIX "A".**

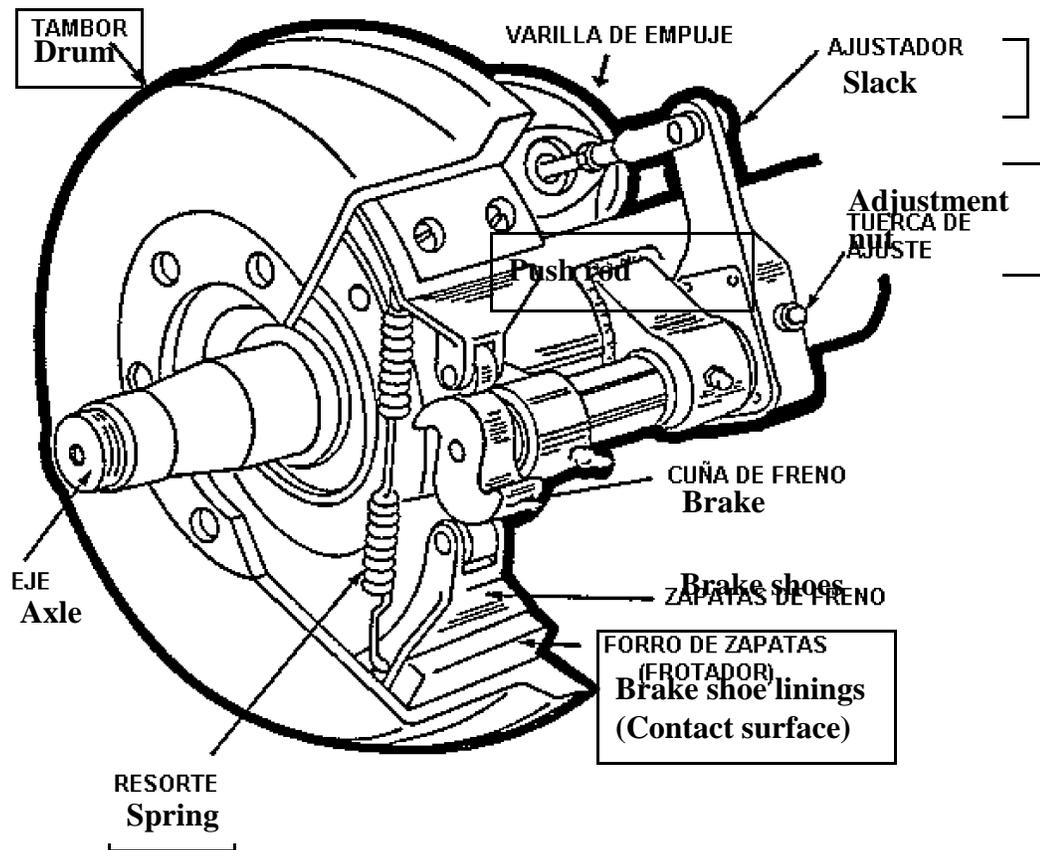
**FIGURE 13. PNEUMATIC SUSPENSION SYSTEM**

APPENDIX "A".

FIGURE 14. DIAGRAM OF PNEUMATIC BRAKE SYSTEM

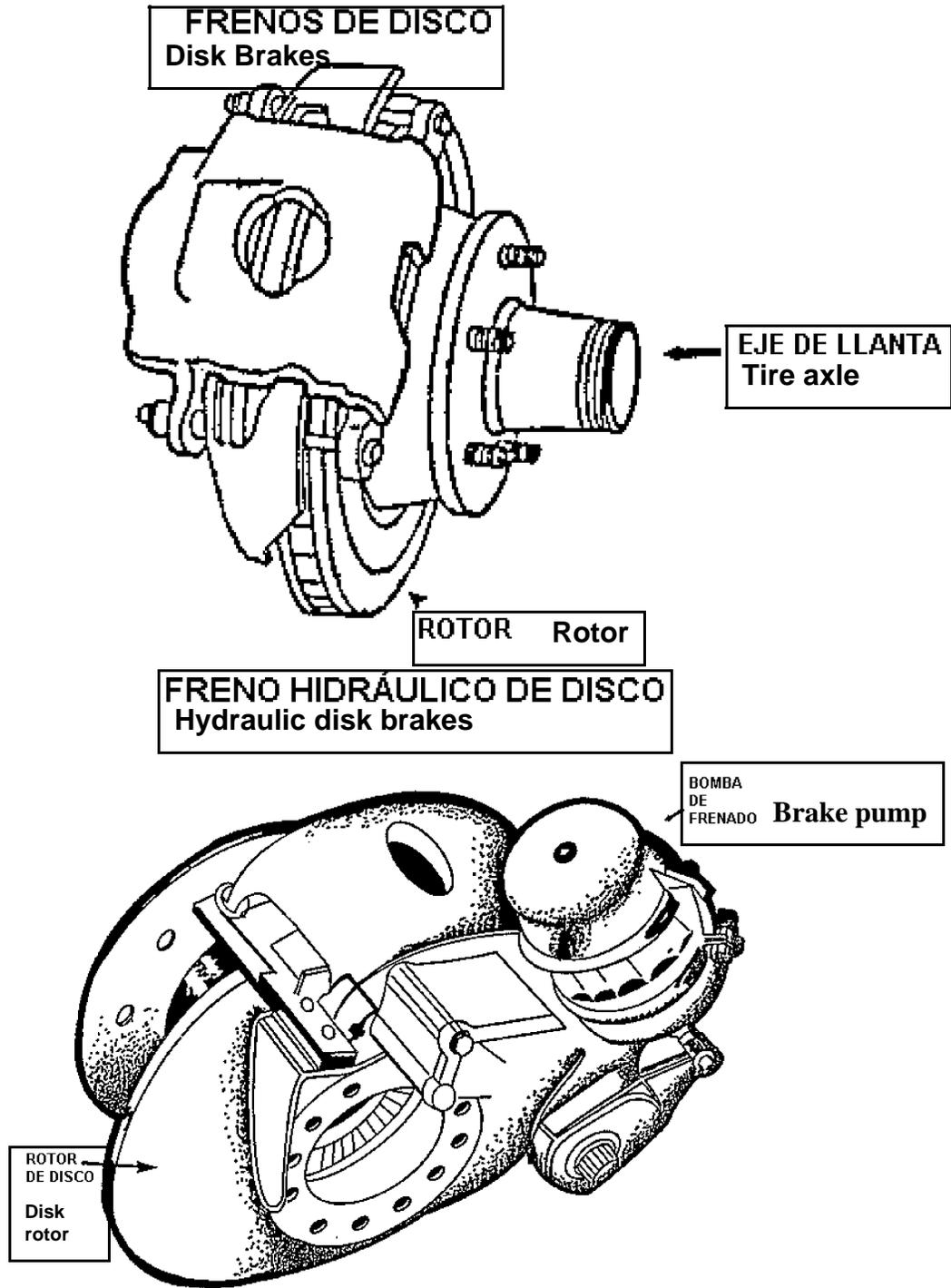


APPENDIX "A".  
FIGURE 15. DRUM BRAKES





APPENDIX "A".  
FIGURE 16. DISK BRAKES



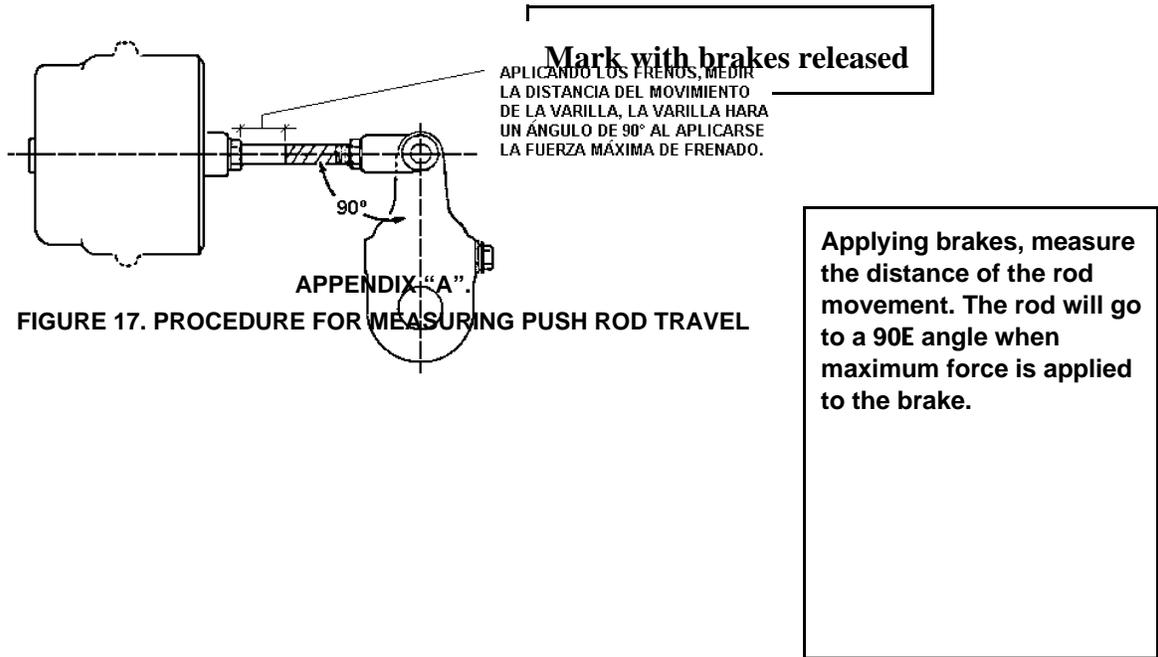
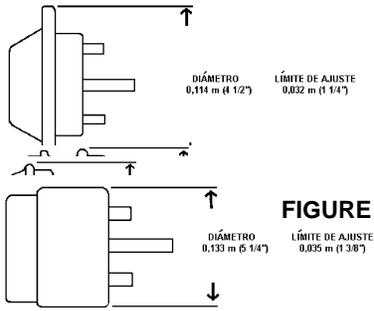


FIGURE 17. PROCEDURE FOR MEASURING PUSH ROD TRAVEL

When the rod's angle is under 90E, the brake needs adjusting. The rod may be touching bottom, or brake force is not optimal.



APPENDIX "A".

FIGURE 18. AIR CHAMBER MEASURING PROCEDURE

Diameter	Adjustment limit

Diameter	Adjustment limit



FIGURE 19. AIR BRAKE HOSES

FOR SEMI-TRAILERS AND TRAILERS

Air brake hoses  
for semi-trailer and trailer

Diameter	Adjustment limit

Diameter	Adjustment limit

Rubber seal  
(Ring)

Air hose coupling device (Glad hands)

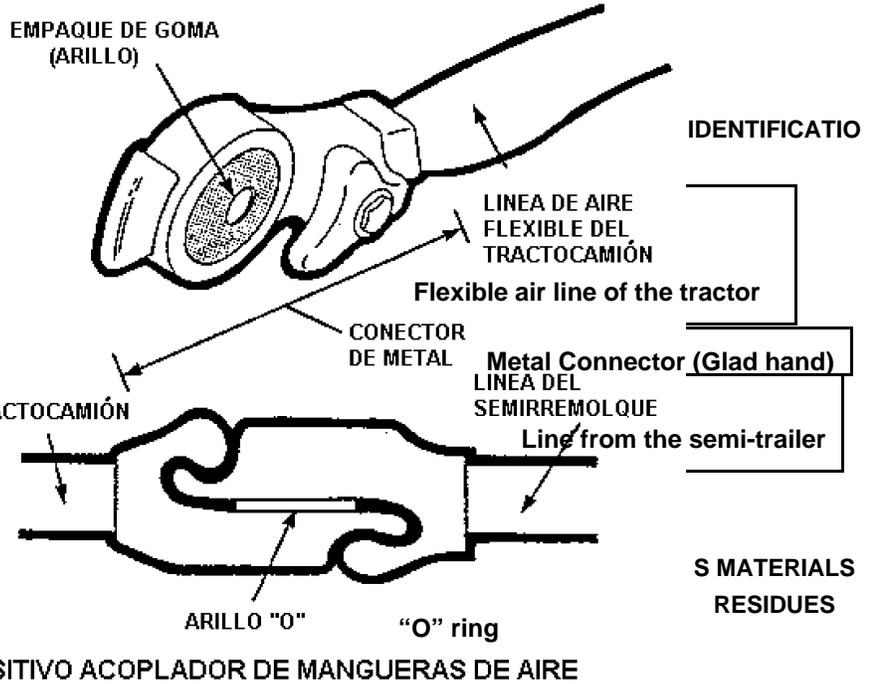
APPENDIX

FIGURE 20.  
N  
PLACARDS  
ON  
VEHICLES

Line from tractor  
LINEA DEL TRACTOCAMIÓN  
TRANSPORTING  
HAZARDOUS  
AND

Placards

Front of truck,  
tractor trailer or  
semi-trailer



Sides of vehicle  
(2) and (3)

Rear of vehicle  
(4)

(1)

- UN 1203 - Gasoline
- UN 1243 - Metil Formiate
- UN 1233 - Metilamylic acetate
- 3 - Class of risk

**APPENDIX "A".**  
**FIGURE 21. LOW AIR PRESSURE WARNING DEVICE**

**Air pressure**

**Air brakes**

**Red light**

**Oil**

**Water**

**Low air**

**Temperature**

**Temperature**

