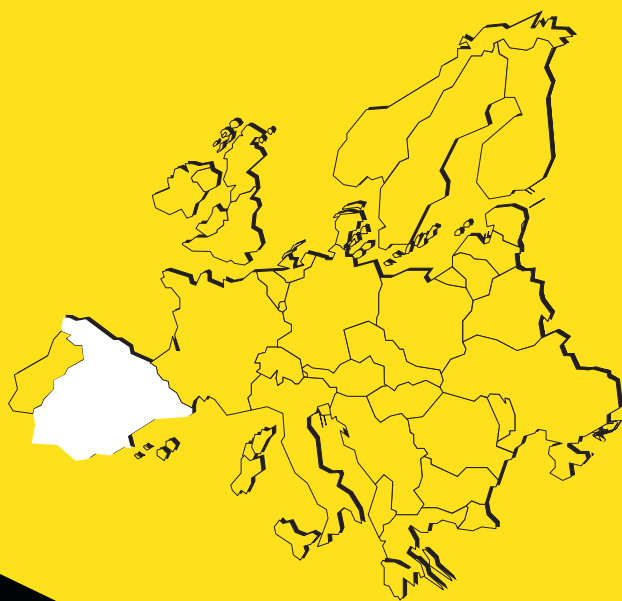


Automatic Tires Pressure System NM 444 HL



Technical Manual



A01.01886-8 REV.: 001

GENERAL INFORMATION



Protection of the Environment:

It is very important to be aware, for this we suggest situate the waste according to the local laws.

SYMBOLS

In this manual, symbols are used to represent different types of information. Each of them is described below with its correct use:



Important: *Failure to comply with these indications may cause in improper handling of the VIGIA System, causing injury or property damage. Make sure to read these explanations.*



Very Important: *Failure to comply with these indications may cause damage to people or things and compromise the operation of the system. Make sure to read these explanations.*



Note/Explanation/Observation: *Indicates additional information about the use of the System, its functions and instructions on how to resolve errors.*

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SECTION 1: INTRODUCTION

Using the wrong tire pressures has a significant negative impact on a vehicle's operational ability, from increased tire wear and fuel consumption to soil compaction and increased driver fatigue.

Driving with the proper tire pressures for load, speed and road conditions, maximizes vehicle mobility and performance in demanding terrain and conditions, reduces overall operating costs, improves fuel consumption, increases traction and safety.

1.1: PURPOSE AND SCOPE OF THE MANUAL

This manual explains how to install and repair the **VIGIA NM 444 ELECTRONIC TIRE CALIBRATOR**, but also includes a basic overview of system components and operation. It also provides the necessary information on installation, full system operation, and troubleshooting.

SECTION 2: ELECTRONIC TIRE CALIBRATOR

2.1: FUNCTION

The system allows you to calibrate the tires to a preset maximum or minimum cold pressure, per circuit, optimizing the tire pressure with respect to the load and speed of your vehicle.

2.2: APPLICATION

The VIGIA NM 444 System is particularly useful when installed on heavy transport vehicles and especially those that are exposed to different types of roads (including off-road) and conditions of use including agriculture, livestock, forestry, transportation fuel, mining and construction.



Very Important: The NM 444 System can be installed in any unit that has an air compressor and a power supply voltage of 12 to 24 V., but its correct operation will depend on:

- The capacity of the unit's air compressor.
- The number of tires to be controlled in the two pressure states.
- The pressure values at which it is required to calibrate the tires.



Very Important: If the rim is made of aluminum and the hub of the unit has iron rim bolts, replace them with longer bolts.

3.1.2: UNIVERSAL ROTOR SUPPORT FOR DUAL AXLES (WITHOUT REDUCING HUB)

These brackets are used in dual axles without reduction hub that have an iron or aluminum disc rim.

3.1.2.1: Installation procedure

- Remove four nuts diametrically opposed, two for side.
- Put the corresponding mounting.
- Tight correctly the nuts.



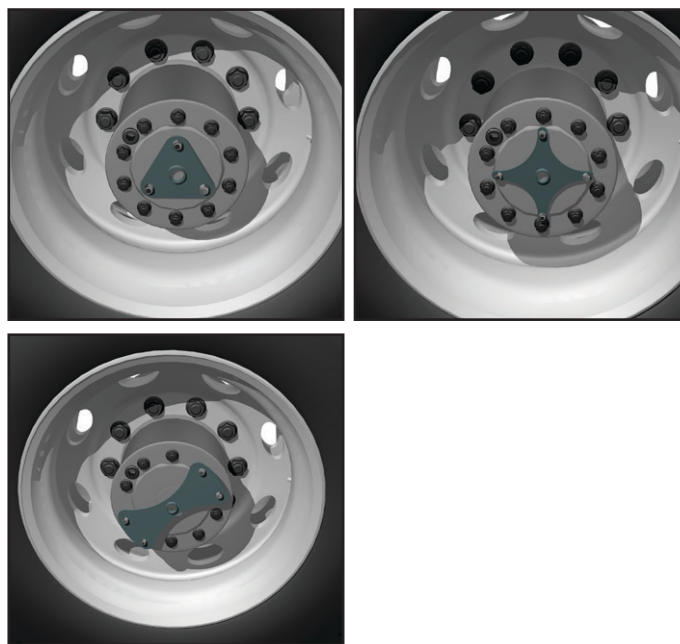
Very Important: If the rim is made of aluminum and the hub of the unit has iron rim bolts, replace them with longer bolts.

3.1.3: UNIVERSAL ROTOR SUPPORT FOR DUAL AXLES (WITH REDUCING HUB)

These brackets are used in dual axles with reduction hub that have an iron or aluminum disc rim.

3.1.3.1: Installation procedure

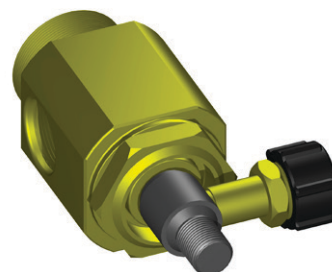
- Replace the bolts or nuts indicated for each brand and model with the studs provided.
- Put the corresponding mounting.
- Tight correctly the nuts.



Very Important: Do not use aluminum rotor supports.

3.2: ROTOR

Its function is to allow air to pass from a stationary point on the truck body to the rotating tyres.



3.2.1: INSTALLATION PROCEDURE

No matter the mounting used, the rotor must be tightened with a moderate torque of approximately 6 ft-lbs. or 8 Nm.

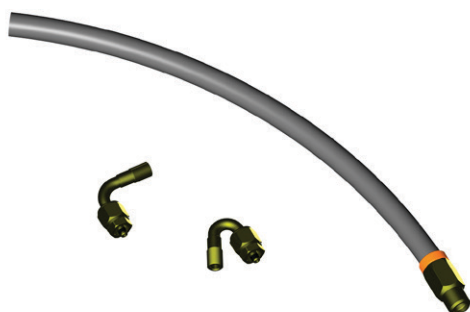


Explanation: The rotor output terminals must be oriented towards the inflation valves, to prevent the inflation connectors from rubbing against the hub or the rim.



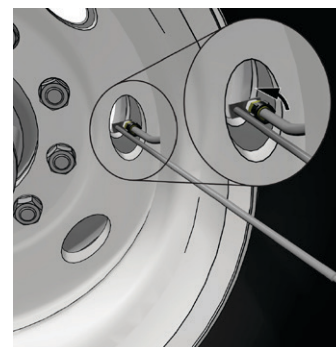
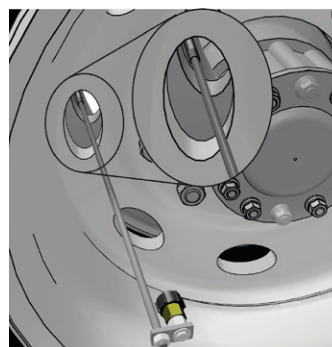
3.3: INFLATION CONNECTORS FOR TIRES

Its metallic ends are free (they do not have a valve) and allow the passage of air in both directions (from the rotor to the tire and vice versa). For its application in external tires of dual axles, it must be complemented with "U" or "L" connectors.

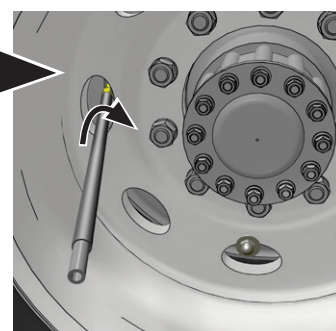
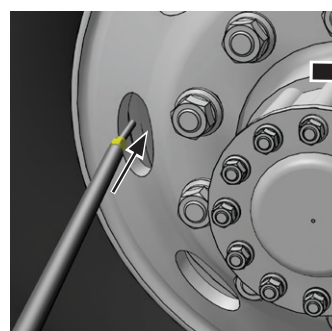


3.3.1: INSTALLATION PROCEDURE

- Correctly clean, with a tap, the external thread of the original valve.
- Remove the internal stem of such valve.



Very Important: If the original valve of the internal tire has an extension, it must be removed to avoid possible air leaks or breaks in the original valve.



Explanation: To thread the valve connector to the internal dual tire, use a steel reinforced arm. To adjust, use the INFLATION VALVE WRENCH.



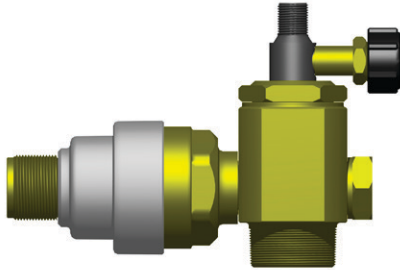
- Screw on the VIGIA connector, gently tightening a torque from 2 to 3 lbs. per ft. (2.7 to 4 Nm) with a wrench.



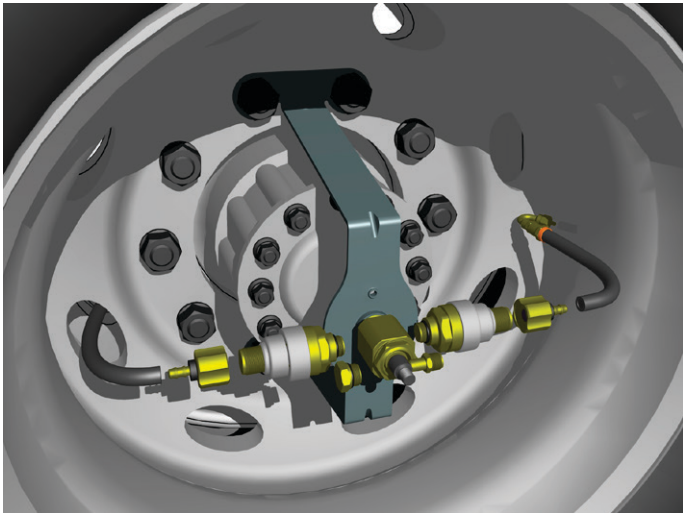
Very Important: The VIGIA valves must not rub against the rims and/ or wheel hubs.

3.4: IRD VALVE

As indicated by its initials, it allows inflation, retains air when disconnecting a tire or depressurizing the network, and allows deflation when switching from Loaded to Unloaded state.



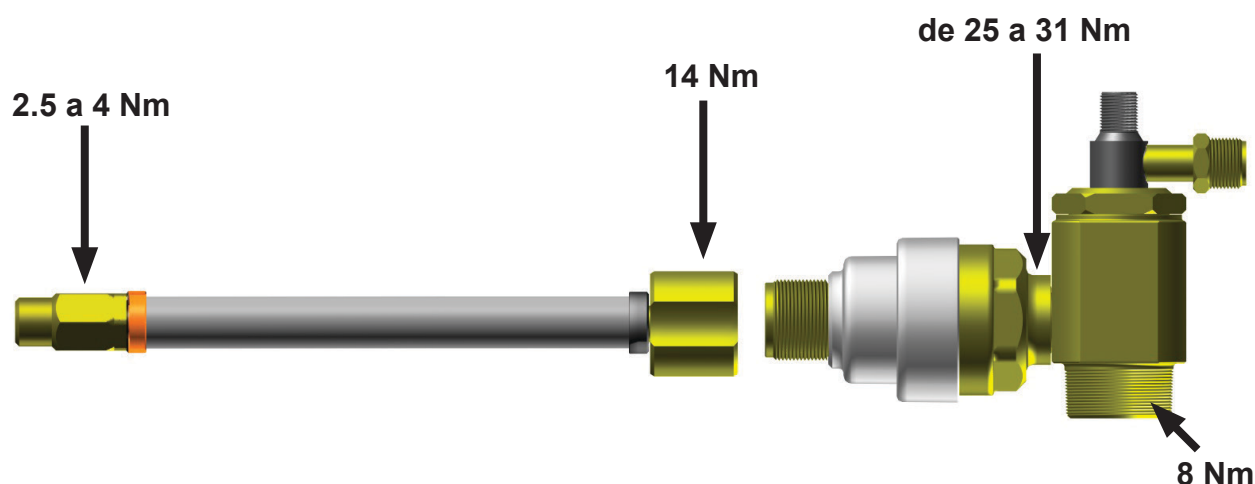
3.4.1: CONNECTING THE VALVES TO THE ROTOR



Note: On front axles with a decorative ring, make two holes in its wing and place rubber grommets to prevent the edge of the metal sheet from damaging the Push-lok hose.



3.5: ELEMENT TORQUE, ROTOR VALVE

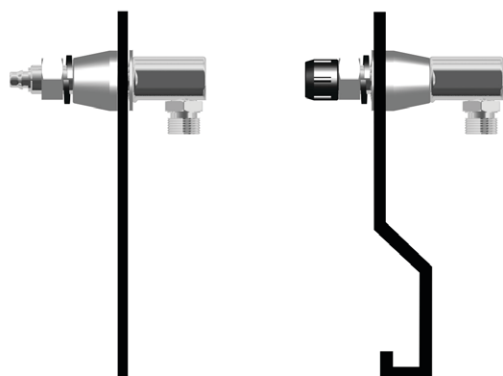


3.6: BODY COUPLINGS

VIGIA offers different models of body couplings.

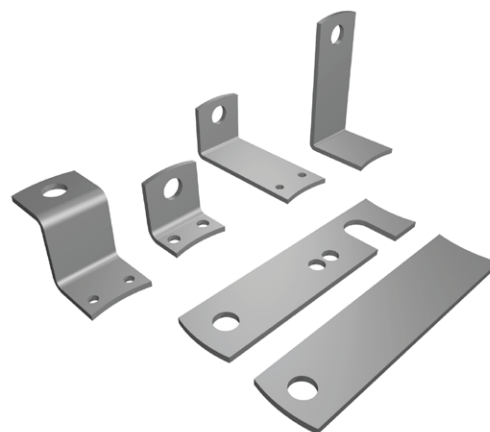


These couplings include a supplement that can be placed either inside or outside the body, fender or other mounting part, according to the molding they have.



3.6.1: INSTALLATION PROCEDURE

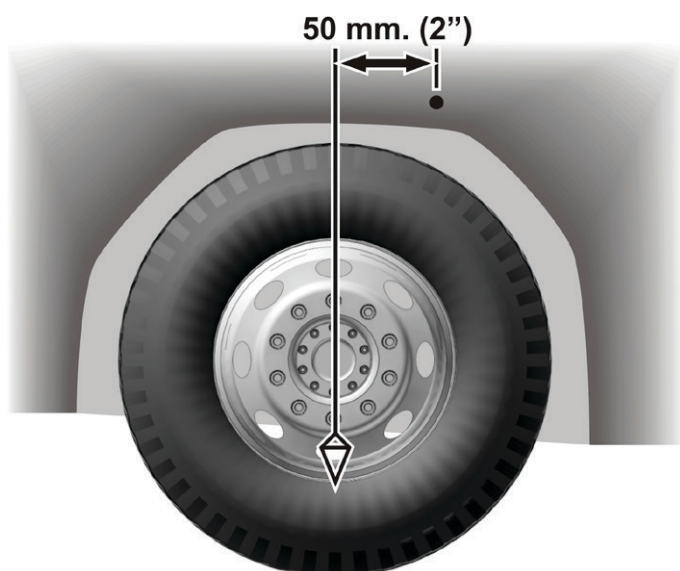
VIGIA offers several models of body coupling mountings designed to prevent extending beyond the vehicle's body or to avoid perforating fenders, body or cabin. Make sure the tyre does not rub against the mounting, even in extreme situations.



3.6.1.1: Steering axles

3.6.1.1.1 Units with cabin and/or fenders with internal reinforcement (or wing)

- Align the steering wheels parallel to the body.
- Hold a plumb line from the fenders, so as the vertical line passes through the center of the rotor.
- Make a mark on the fender or bodywork 50 to 90 mm (2") backwards from the vertical plumb.



Very Important: It is advisable to pre-assemble the reinforced arm and position it. When turning the steering wheel to one side and to the other, check that the tire does not touch the reinforced arm. Otherwise, reposition it at a different distance until it does not touch the reinforced arm in both directions.

d) Hold the body coupling mounting onto the reinforcement and mark both holes.

e) Drill with a $\varnothing 11/64$ " bit (4 mm) and fasten with the provided bolts, washers and nuts.

f) Install the corresponding coupling.



3.6.1.1.2 Units with cabin and/or fenders without internal reinforcement (or wing)

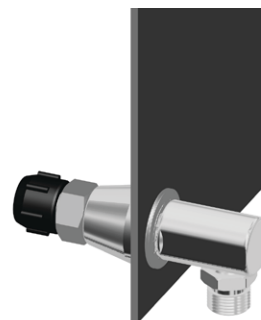
a) Mark a point 2" (50 mm) towards the back of the vehicle and as close as possible to the edge of the fender.

Before drilling, make sure that there are no obstruction inside inside the fender.

If there is any obstruction, find an unobstructed spot as close as possible to the point originally marked.

b) First, drill with a $\varnothing 13/64$ " (5 mm) bit and then with a $29/64$ " (11.5 mm) bit.

c) Install the corresponding coupling.



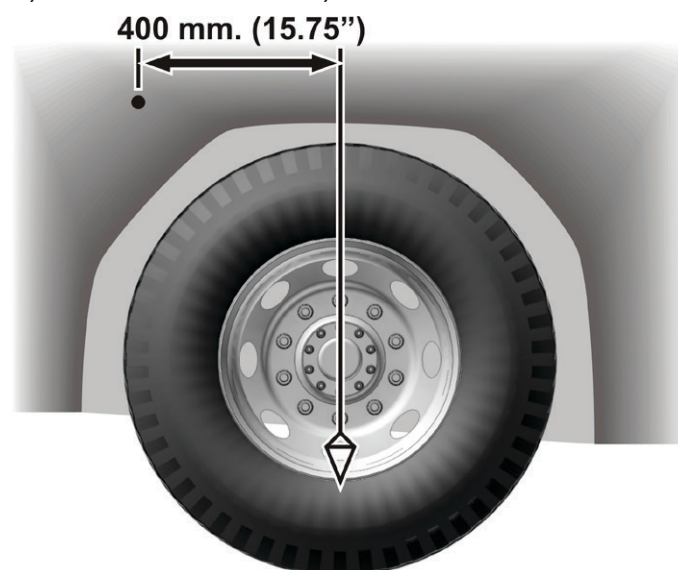
Note: In cases of trailers with one directional axle, follow the instructions described in 3.6.1.1. If not, follow the instructions from 3.6.1.3.

3.6.1.2: Non steering axles (with body or fenders)

3.6.1.2.1 Single axles

a) Using a plumb, mark a point 15.75" (400 mm) in front of the axle and as close as possible to the edge of the fender or body.

b) Proceed as item b) from 3.6.1.1.2.



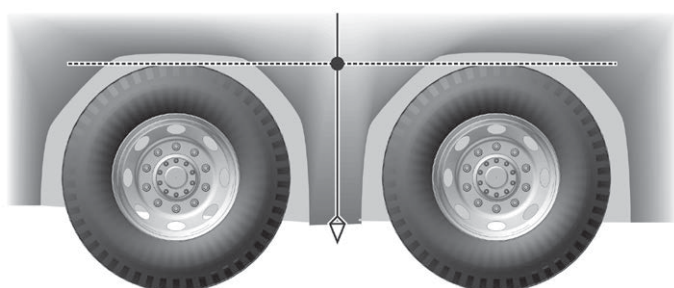
Explanation: In every unit containing internal reinforcement (or wing), a body coupling must be installed using the mounting, screws, washers and nuts provided with the system, fastening it to the reinforcement previously mentioned.

3.6.1.2.2 Double axles



Observation: This method is only applicable if the inflation pressure of tires on both axles is the same. Otherwise, refer to the method for single axle.

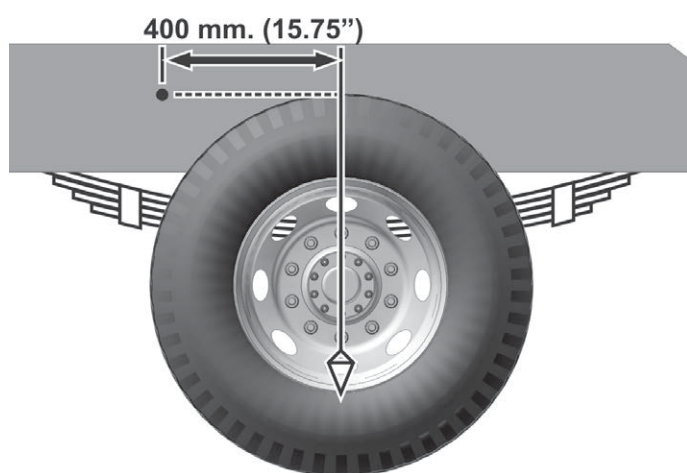
- Using a plumb line, determine the center line between axles.
- On the determined line, define a point at tires level approximately.
- Proceed as explained in point 3.6.1.1.2.
- Install the double outlet body coupling.



3.6.1.3: Non steering axles (Without Cabin or Fenders or with Swivel Cabin)

3.6.1.3.1 Single axles

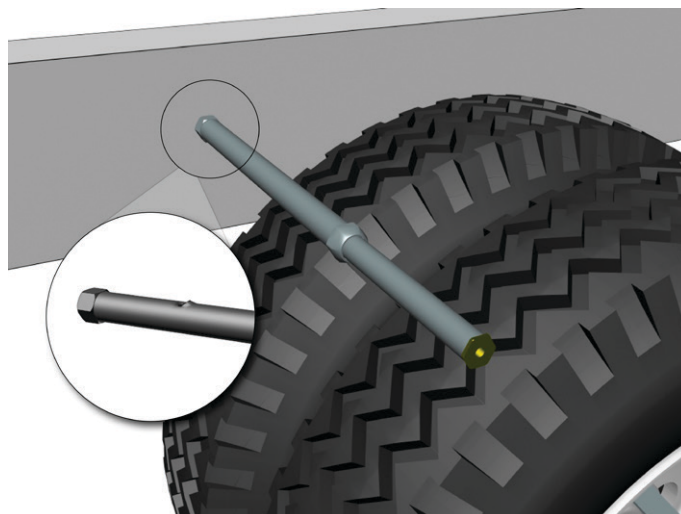
- Find a bolt or hole in the chassis approximately 15.75" (400 mm) in front of the tyre's central line, and at a height that will avoid any rubbing of the mounting, even with the suspension working to load limit.



Note: If there are not bolts or holes in the unit in that spot, make a 5/8" (16 mm) hole.

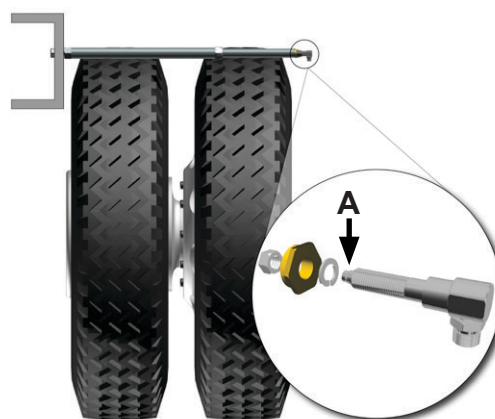
- Take the selected bolt out.

- Secure the base of the variable body coupling support with the screw provided for this purpose. Tighten with a torque of 115 lbs. x ft or 15.89 kg x m. or 155.92 Nm approximately.



Explanation: The base of the variable body coupling support must be with the output hole for the VIGIA tube oriented downwards to avoid the accumulation of water inside it.

- Take the reducer out from the extension and place in it the body coupling, eliminating the supplement and placing the washer from the outside.
- Cut the required VIGIA hose length and connect the body coupling with the T or cross joint to be placed approximately in the middle of the axle.
- Place the fastening nut on the corresponding polyamide hose end, insert it in the coupling's terminal and secure the hose tightening the nut by hand.
- Screw and fasten the reducer in the extension.



h) Insert the extension in the mounting until the body coupling remains approximately 5/8" (16 mm) from the edge of the tyre.



Explanation: Previously, pass the VIGIA hose through the hole placed in the mounting.

i) Fasten the mounting nut with a spanner and secure the extension.

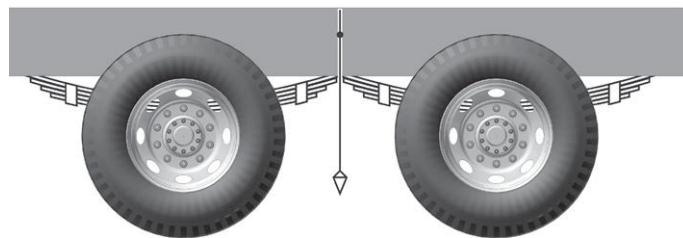


3.6.1.3.2 Double axles



Explanation: This procedure applies only when the air pressure in tyres of both axles will be the same. If that is not the case, refer to the procedure for single axles.

a) Find a bolt or hole in the middle of both axles and at a convenient height.



Note: If there are not bolts or holes in the unit in that spot, make a Ø 5/8" (16 mm) hole.

b) Proceed as item 3.6.1.3.1. from b)



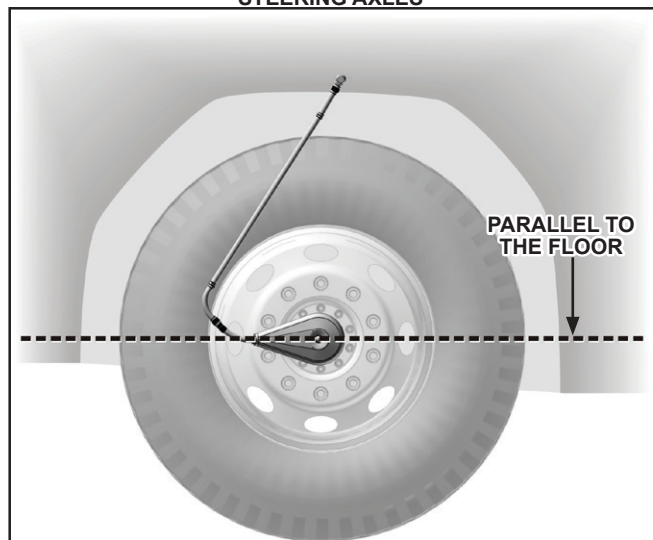
3.7: CONNECTION BETWEEN BODY COUPLING AND ROTOR

This connection controls the tyre pressure and preserves the tyres inflated when the unit is moving without restricting the suspension, the turning of the wheels, etc.

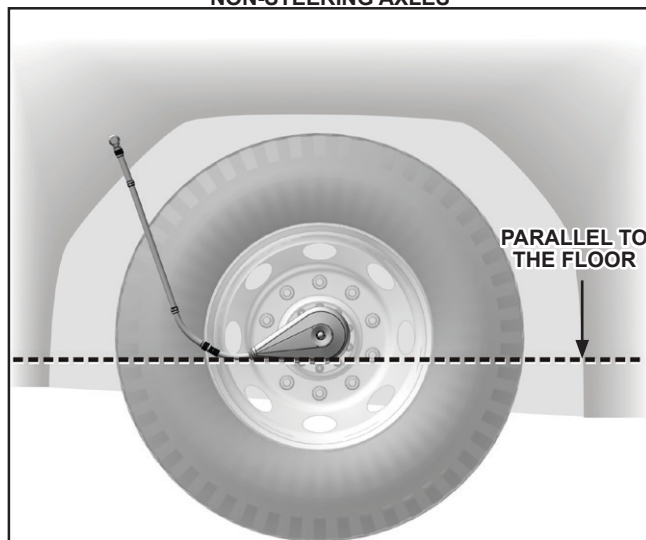


Note: The positions of the rotor cover are shown in relation to an unloaded unit.

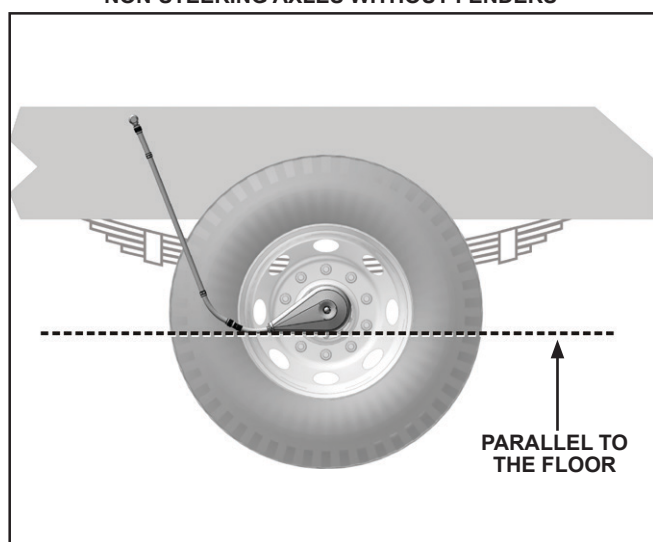
STEERING AXLES



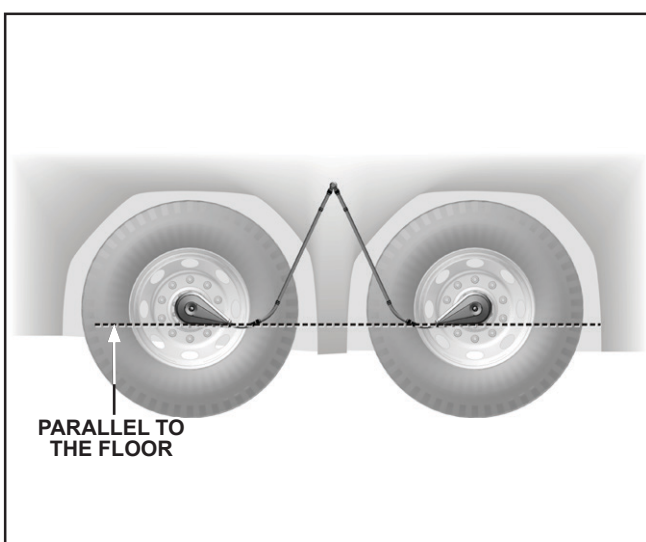
NON-STEERING AXLES



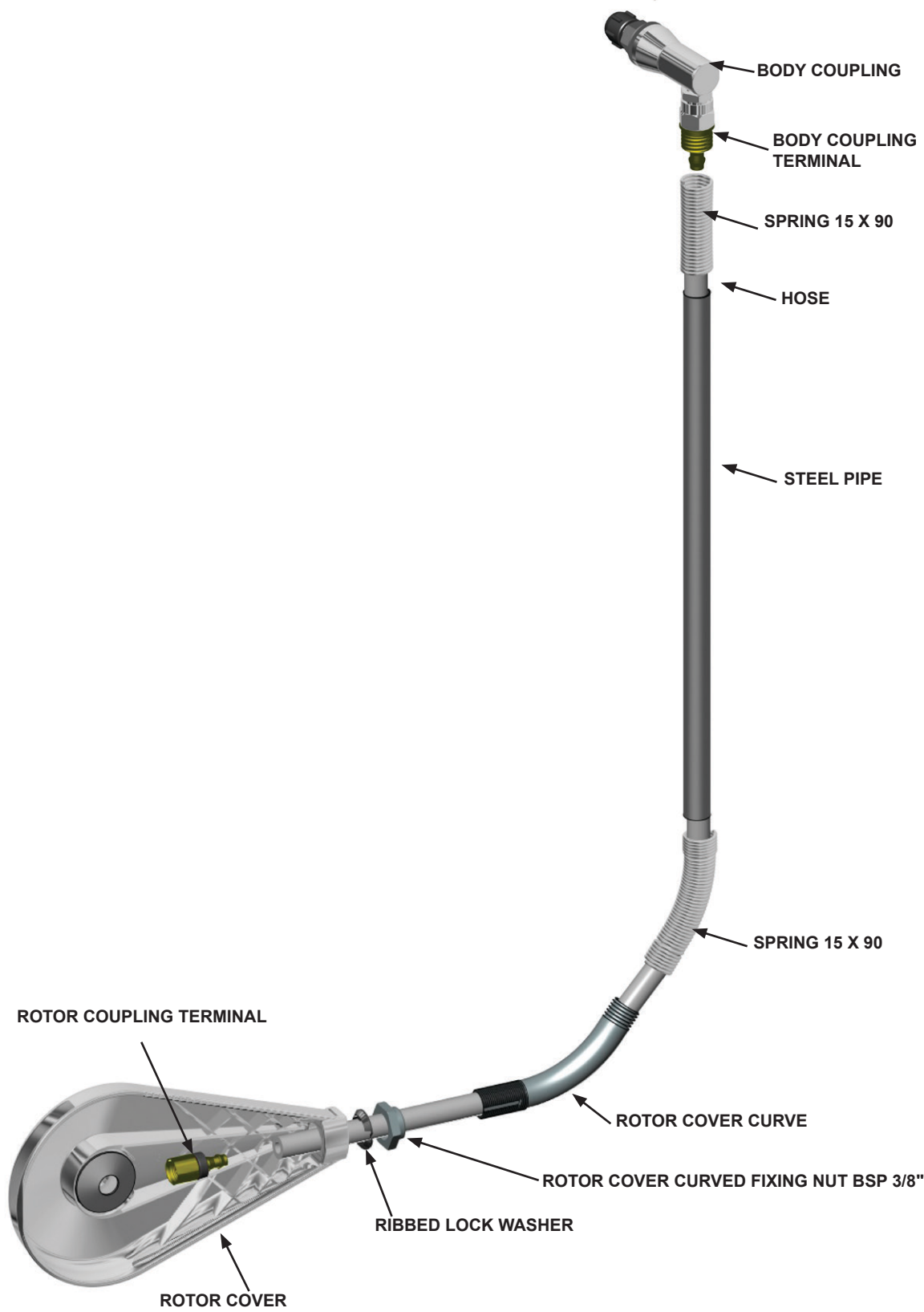
NON-STEERING AXLES WITHOUT FENDERS



DOUBLE AXLES



3.7.1: SET ASSAMBLY



a) Screw the nut on the rotor cover curve as far as it will go, without forcing and then the serrated lock washer.

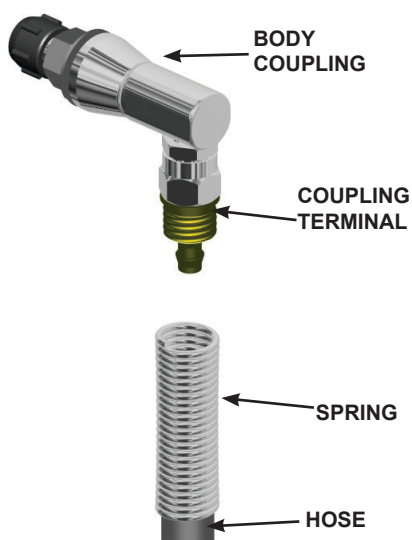


b) Screw the bend in the rotor cover until the washer cramps fit with the cover cramps. Screw a spring to the rotor cover.



Important: The spring has its connecting end, put the larger end in the bend.

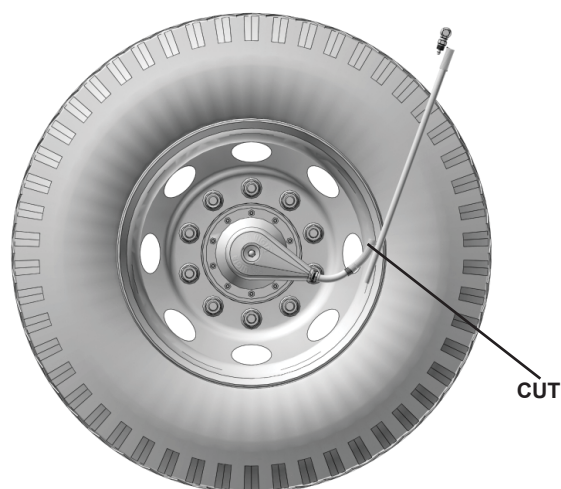
c) Put the other spring, at one of the ends of the tube, approximately 10 mm (3/8"). Then screw and adjust the coupling terminal into the body coupling.



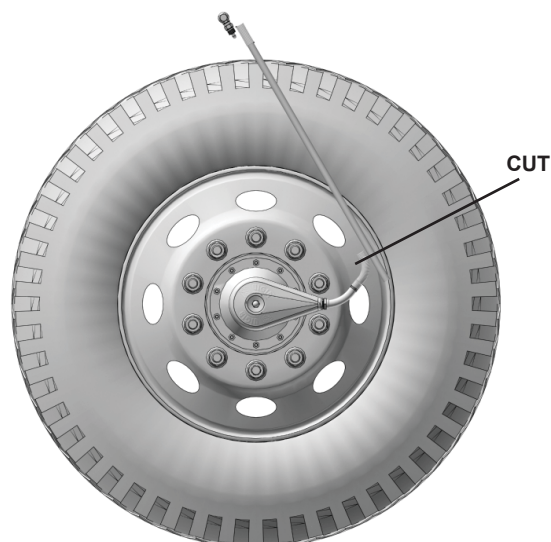
Important: The spring has a connecting side, put the smaller diameter side on the tube.

d) Measure the length of the pipe (before, put the cover in the rotor) so that the slope takes the appropriate position.

NON-STEERING AXLES



STEERING AXLES

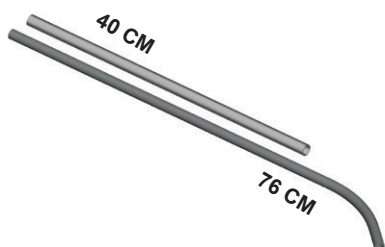


Explanation: Cut the pipe at the appropriate length; remove the burr and possible cutting edges, if necessary.

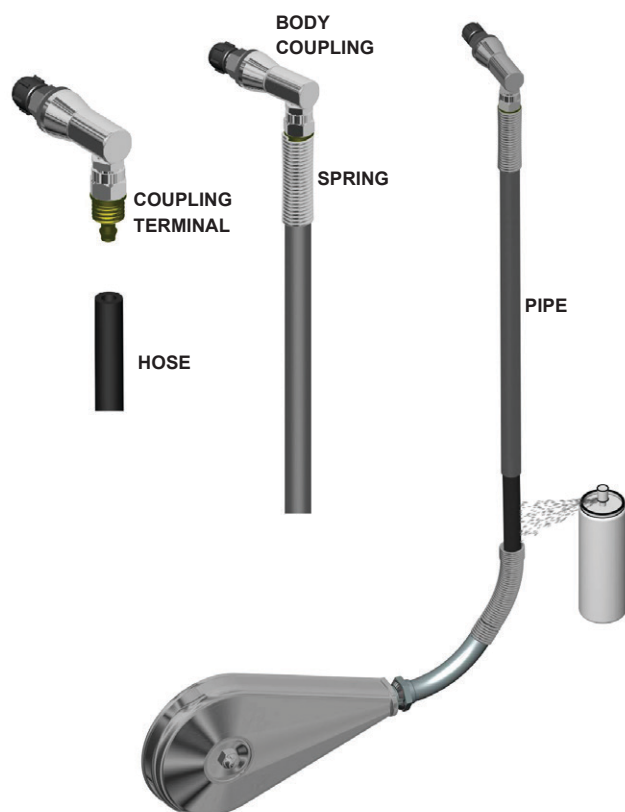


e) Cut the Push-lok hose, 36 cm, longer than the pipe.

Example: If the pipe was cut at 40 cm, the hose should be 76 cm long.



f) Insert one end of the hose in the coupling terminal of the body, then pass the other end of the hose through the assembly (spring - pipe). Screw the spring to the body coupling terminal and introduce the end of the pipe through the spring and the rotor cover.



h) Insert the coupling terminal into the rotor axle. Insert the hose in the terminal and fasten the terminal with a spanner.

i) Put the rotor cover in its place, fastening the nut with a torque of approximately 6 ft-lbs (8.13 N x m) to 8 ft-lbs (10.85 N x m).



j) Place the bend in the correct position, to keep the pipe 5/8" (16 mm) from the tyre's edge and secure the bend with the hexagonal nut.



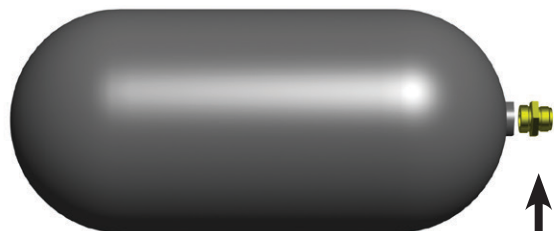
Note: Use lubricating oil or similar product if necessary.

g) Put the spring in the pipe, about 3/8" (10 mm). Verify the hose is not obstructed inside the assembly, mainly in the bend.

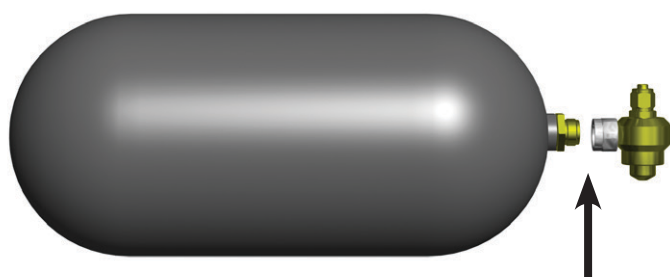
3.9.4: INSTALLATION PROCEDURE



Note: To adapt the valves to the different original threads, several couplings are available.



REMOVE THE ORIGINAL PLUG,
LOCATED IN THE MIDDLE OR
UPPER PART AND PLACE THE
CORRESPONDING COUPLING



INSTALL THE BLOCKING VALVE

3.10: NM 444 CONTROL PANEL

It has a module and a panel that, connected to each other by electrical connections, fulfill the function of a control panel. It is provided to control 3 pressure circuits, in 12 V. or in 24 V.

It should be noted that each pressure circuit can control 1, 2 and up to a maximum of 3 axes, as long as they are calibrated at the same pressure.

3.10.1: GENERAL FEATURES

- ✓ Alarm system with different warning sound levels according to the magnitude of the loss and inflation capacity.
- ✓ Automatic detection and cancellation due to network damage, or tire blowout and/or completely deflated tire (undercut).
- ✓ Calibration range in Unloaded state: from 1 BAR to 11 BAR.
- ✓ Calibration range in Loaded state: from 3.5 BAR to 11 BAR.
- ✓ Detection of excessive loss of air.

- ✓ Inhibition of alarms during contact and without inlet pressure, until the unit recovers normal air pressure values.
- ✓ Easy regulation of the System.
- ✓ Can Bus communication system between panel and module.
- ✓ Capacity to control up to 3 different pressure circuits, with a single reading panel.
- ✓ It works in 12 V. and 24 V. Working voltage from 11 V. to 31 V.
- ✓ Loaded voltage spike protection.
- ✓ Power supply polarity inversion protection.
- ✓ Suitable for GESTYA.

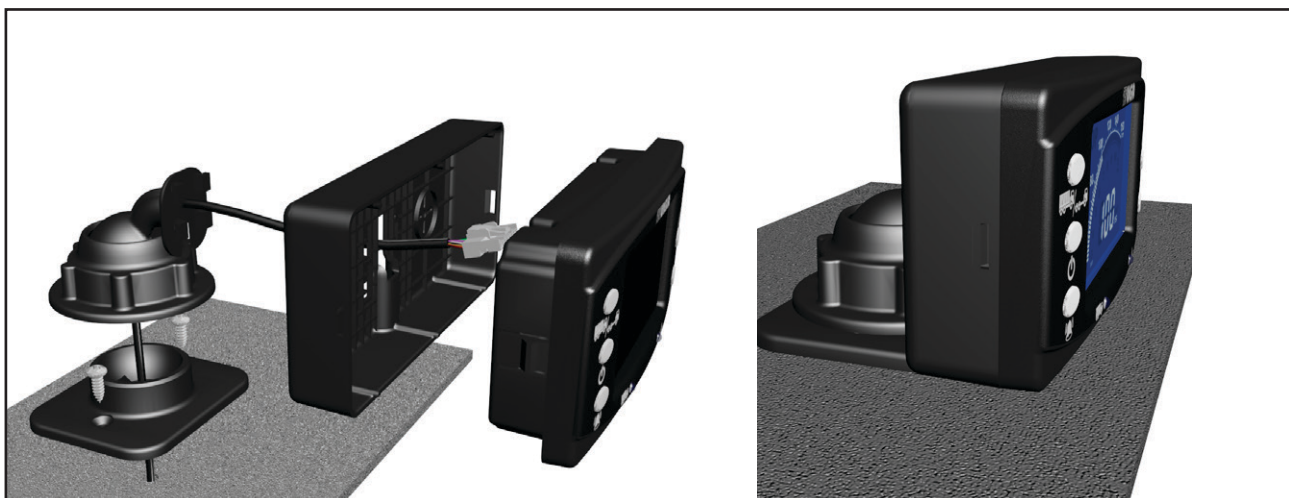
3.10.2: PANEL

3.10.2.1: Characteristics

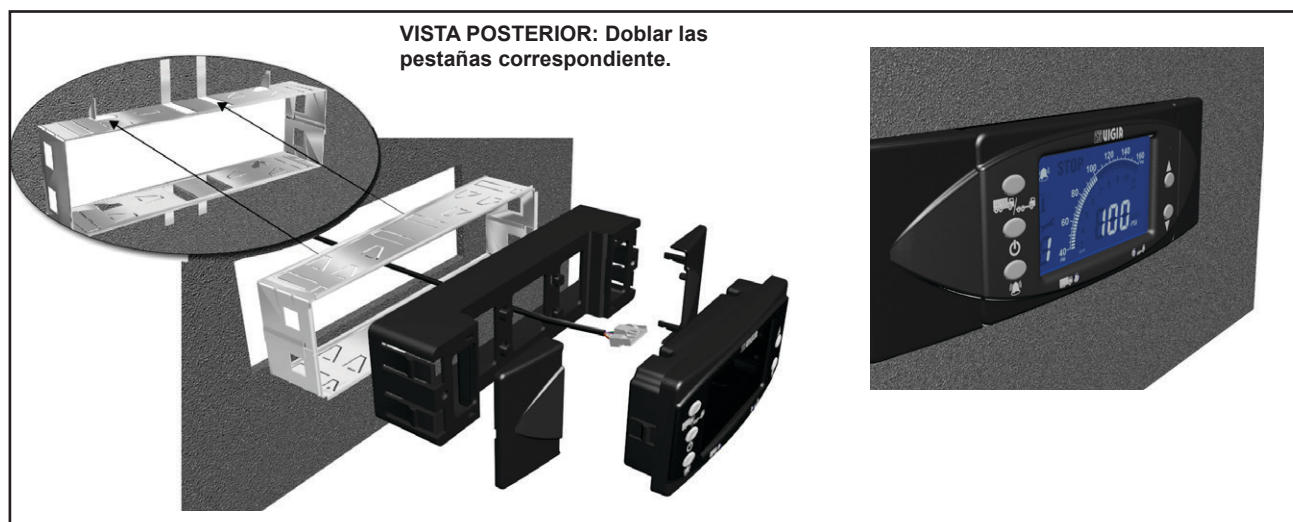
- ✓ External dimensions: 117 mm x 58 mm x 35 mm.
- ✓ Analog (up to 11 BAR) and digital (up to 13.7 BAR) pressure indication.
- ✓ Manual or sequential display of pressures.
- ✓ Brightness manual modification of the display.
- ✓ Total manual cancellation of the System (all pressure circuits).
- ✓ Display of the air inlet pressure to the module.
- ✓ Possibility to cancel manually the alarm, activating it again after 10 minutes to remind the situation of the tires.
- ✓ Indication of supply voltage and temperature of the inflation module.

3.10.3: INSTALLATION PROCEDURE

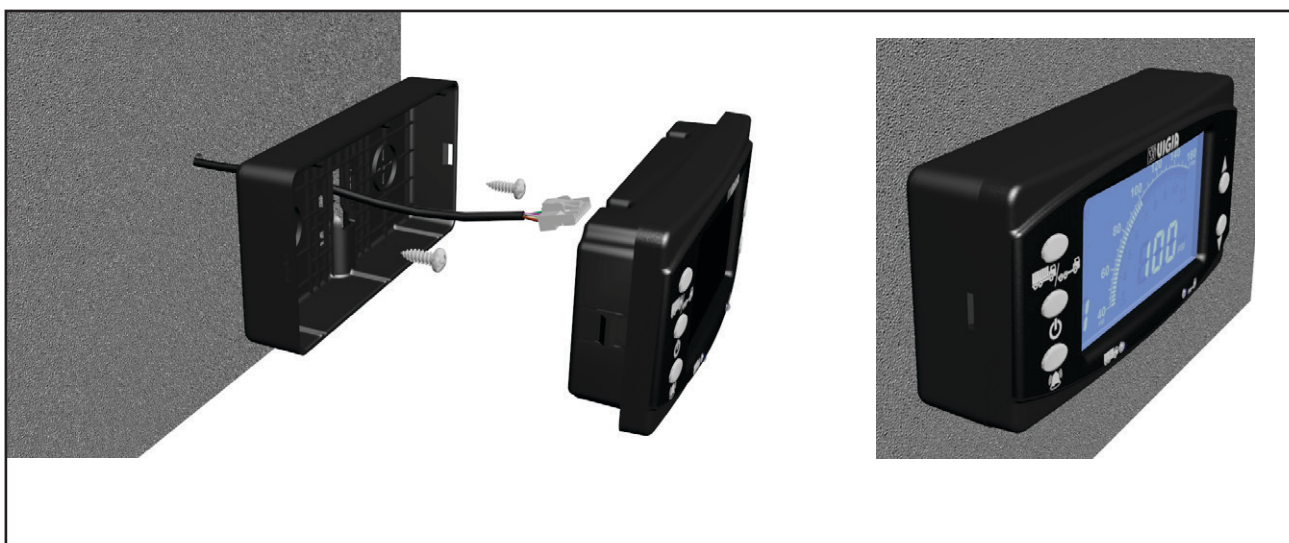
3.10.3.1: Using the support provided



3.10.3.2: Via DIN format



3.10.3.3: Attaching it to a surface with two tapping screws



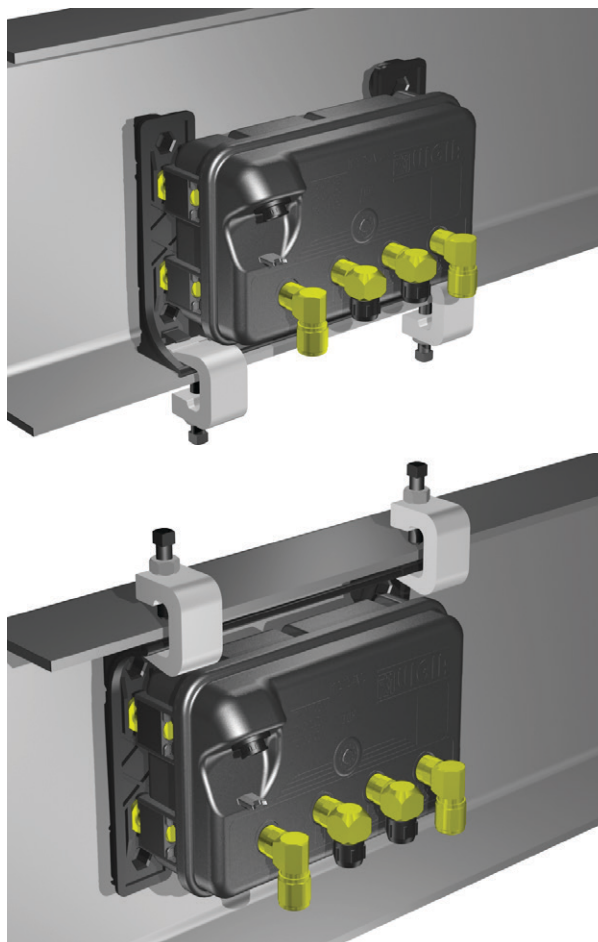
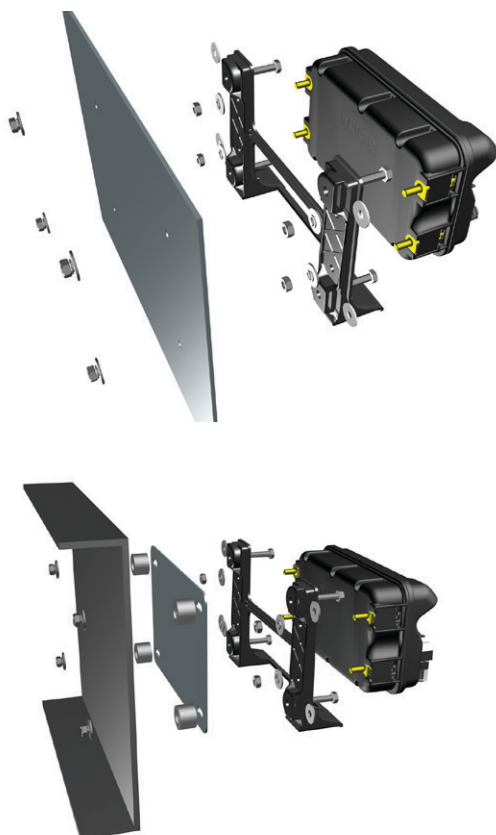
3.11: INFLATION MODULE

3.11.1: CHARACTERISTICS

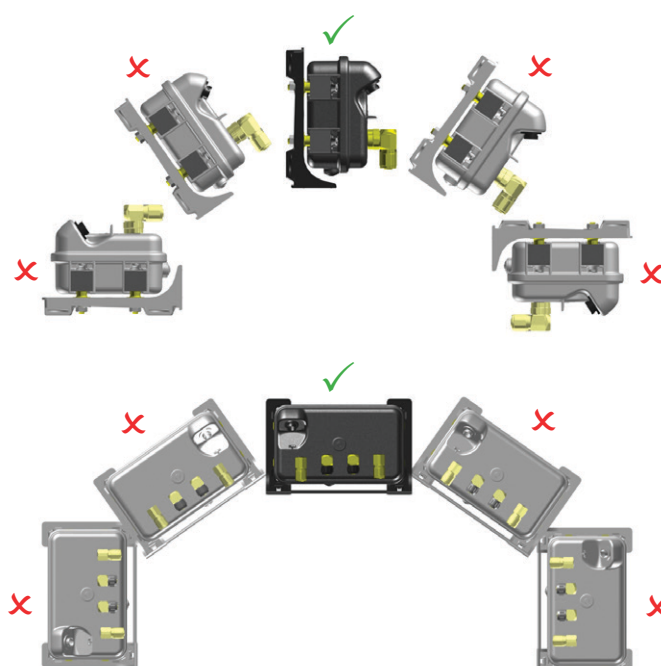
- ✓ Module dimensions: 186 mm x 114 mm x 58 mm.
- ✓ To control two or three pressure circuits.
- ✓ Automatic cancellation of the inlet pressure through the safety device calibrated at 5.5 BAR.
- ✓ Maximum admissible pressure 13.7 BAR.
- ✓ Operating voltage since 11 V. a 31 V.
- ✓ Consumption per electrovalve: The currents they handle are 220 mA for excitation and 60 mA for maintenance.
- ✓ Suitable for outdoor use (IP 67).
- ✓ Working range: from -15 °C to 100 °C. For low temperatures, the percentage of humidity in the air is very important.
- ✓ Module weight (with bracket): 1660 g.
- ✓ High precision electronic sensor.
- ✓ High voltage spike protection.
- ✓ Power supply polarity inversion protection.

3.11.2: INSTALLATION PROCEDURE

Secure on the chassis or body using the support, bolts and nuts provided.



Very important: Due to its design and construction, the module must be installed only in the indicated position to prevent the humidity of the compressor air from being deposited in the electrovalves.



3.12: DEPRESSURIZER MODULE

It allows depressurizing the air network of the different circuits at the same time when switching from Loaded to Unloaded state.

3.12.1: CHARACTERISTICS

- ✓ Module dimensions: 121 mm x 141 mm x 82 mm.
- ✓ Maximum admissible pressure 12 BAR (175 PSI).
- ✓ Operating voltage since 11 V. a 31 V.
- ✓ Electrovalve consumption 400 mA regulated current (for 12 and 24 V).
- ✓ Module suitable for outdoor use (IP 67).
- ✓ Working range: from -15 °C to 100 °C. For low temperatures, the percentage of humidity in the air is very important.
- ✓ Module weight (with bracket): 1340 g.
- ✓ Made of plastic injection with fiberglass.

3.12.2: INSTALLATION PROCEDURE

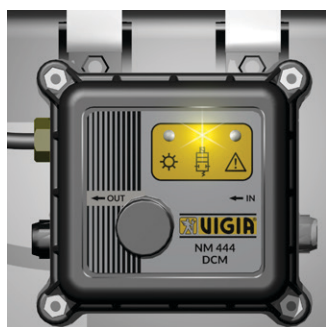
Secure on the chassis or body using the support, bolts and nuts provided.



FLASHING:
EQUIPMENT ON



STEADY:
DEPRESSURIZED PROCESS



3.13: 2/3 WAY NETWORK SHUNT TO DEPRESSURIZER MODULE

Its function is to link the pressure circuits that are being controlled, to a single one to connect to the depressurizing module, preventing air from passing from one circuit to another.

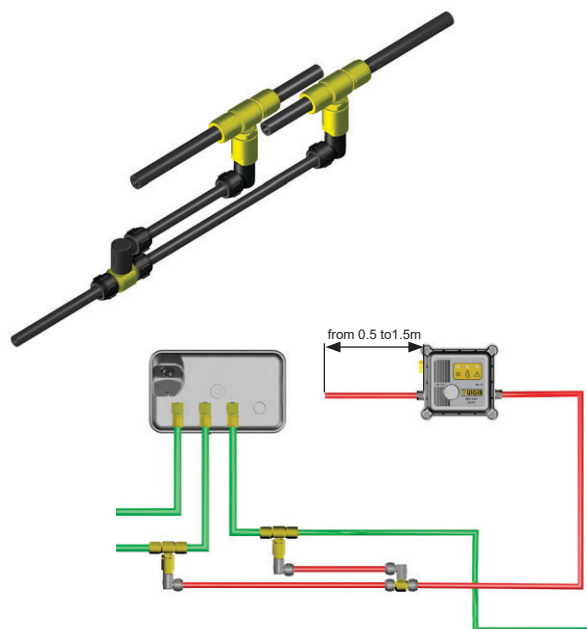
3.13.1: CHARACTERISTICS

- ✓ The "T" joints have an internal non-return valve.

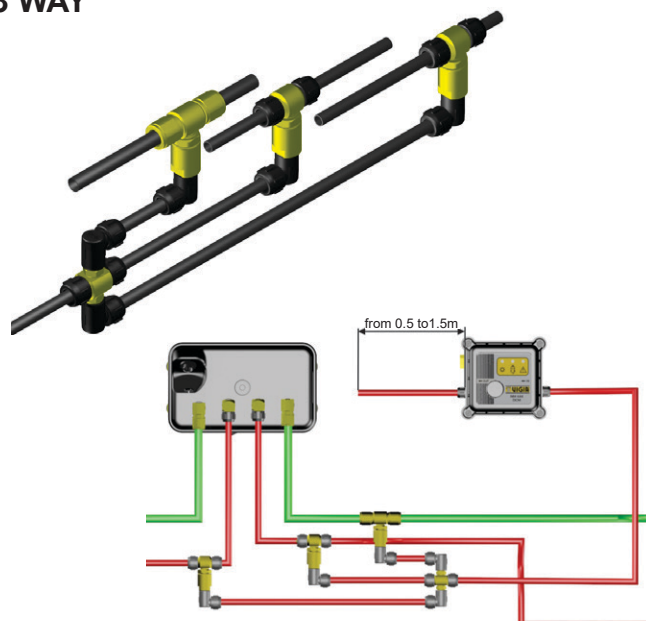
3.13.2: INSTALLATION PROCEDURE

Insert a "T" joint, for each pressure circuit and its outlet, connect to the collector of the network shunt and from the latter to the inlet of the depressurizing module.

2 WAY



3 WAY

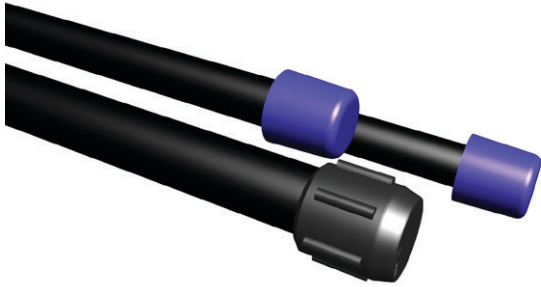


SECTION 4: TIRE CONNECTIONS

4.1: PNEUMATIC DIAGRAM



Important: Before inserting the polyamide tubes through the chassis and body, put the plugs provided on the end of the tube, to prevent dirt (dust, sand, grease, etc.) from entering the VIGIA air network System and cause malfunctions.



4.1.1: NM 444 MODELS

The NM 444 system uses an exclusive pneumatic system, from the auxiliary tank to the inflation module, going through a safety valve (blocking) and a solid particle filter.

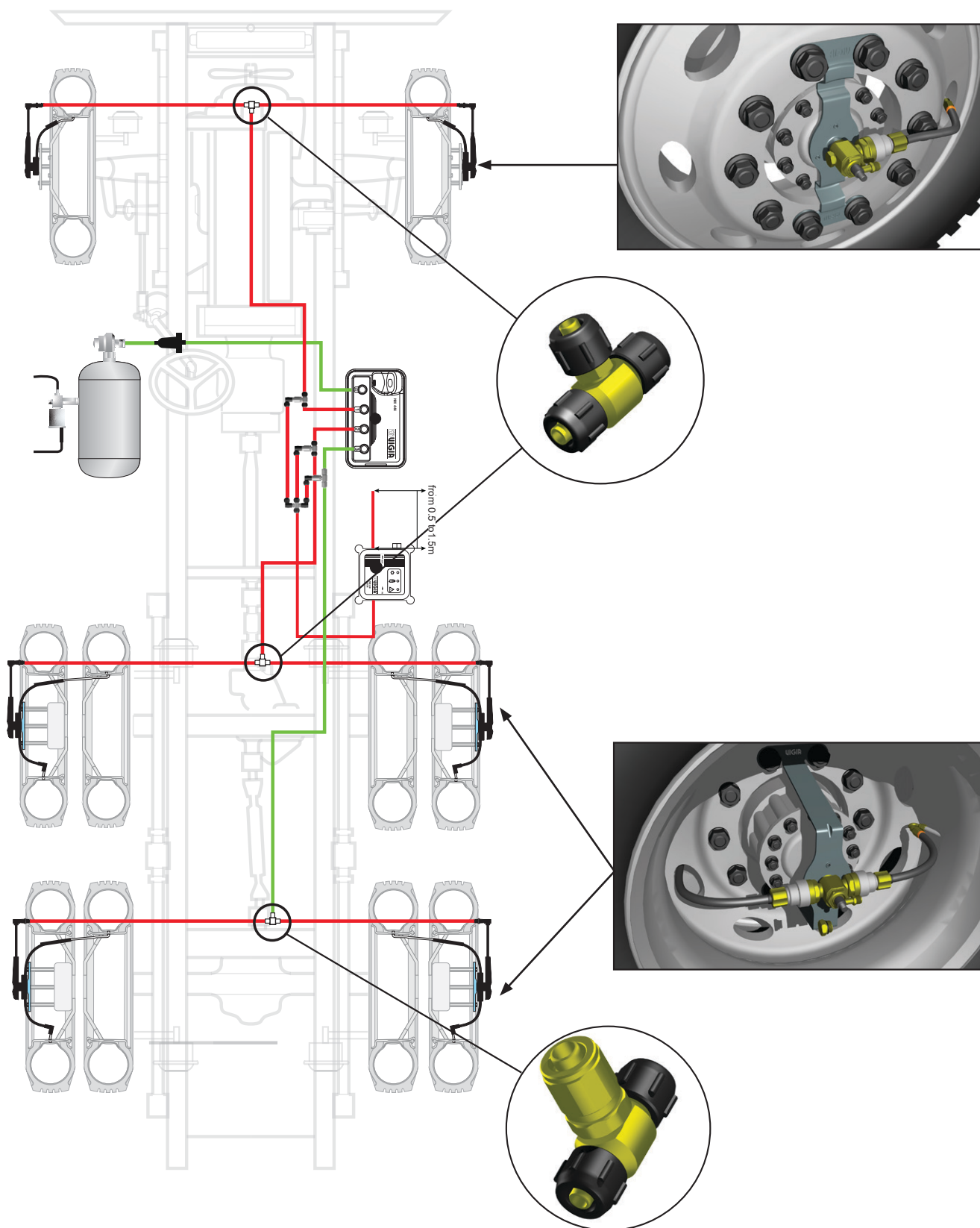
The air network is made of as follows:

- ✓ From the blocking valve to the Ø 10 mm tube module.
- ✓ Circuit 1 and 2 5/16" (8 mm) tube.
- ✓ Circuit 3 (from the module to the T joints) Ø 10 mm tube.



Explanation: In the case of a semi-trailer, a Ø 1/2" spiral tube is used.

TRUCK DIAGRAM 3 CIRCUITS 3 AXLES



GREEN Tube Ø 10 mm

RED Tube Ø 5/16"

DIAGRAM TRUCK-TRACTOR 3 CIRCUITS 3 AXLES AND SEMI-TRAILER

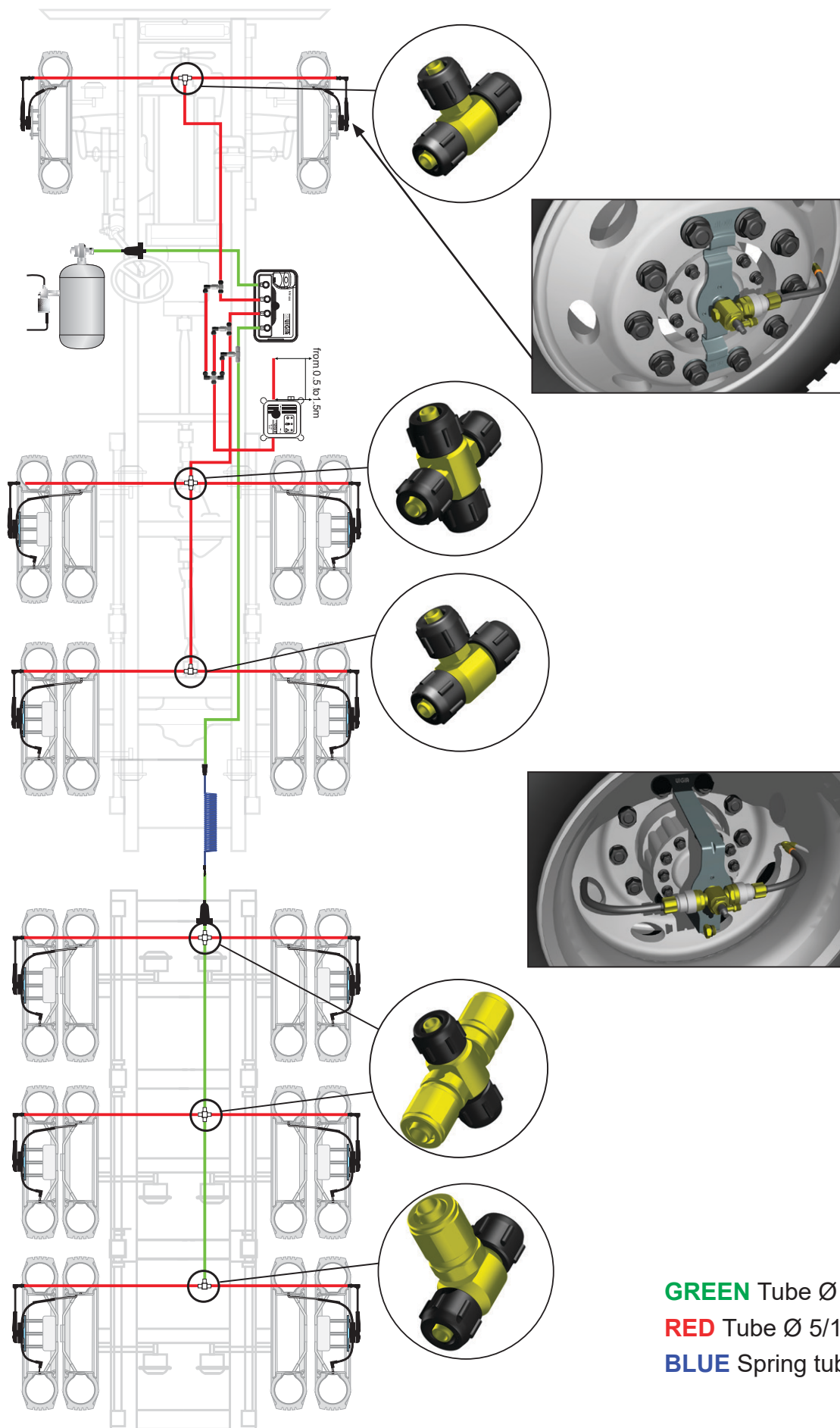
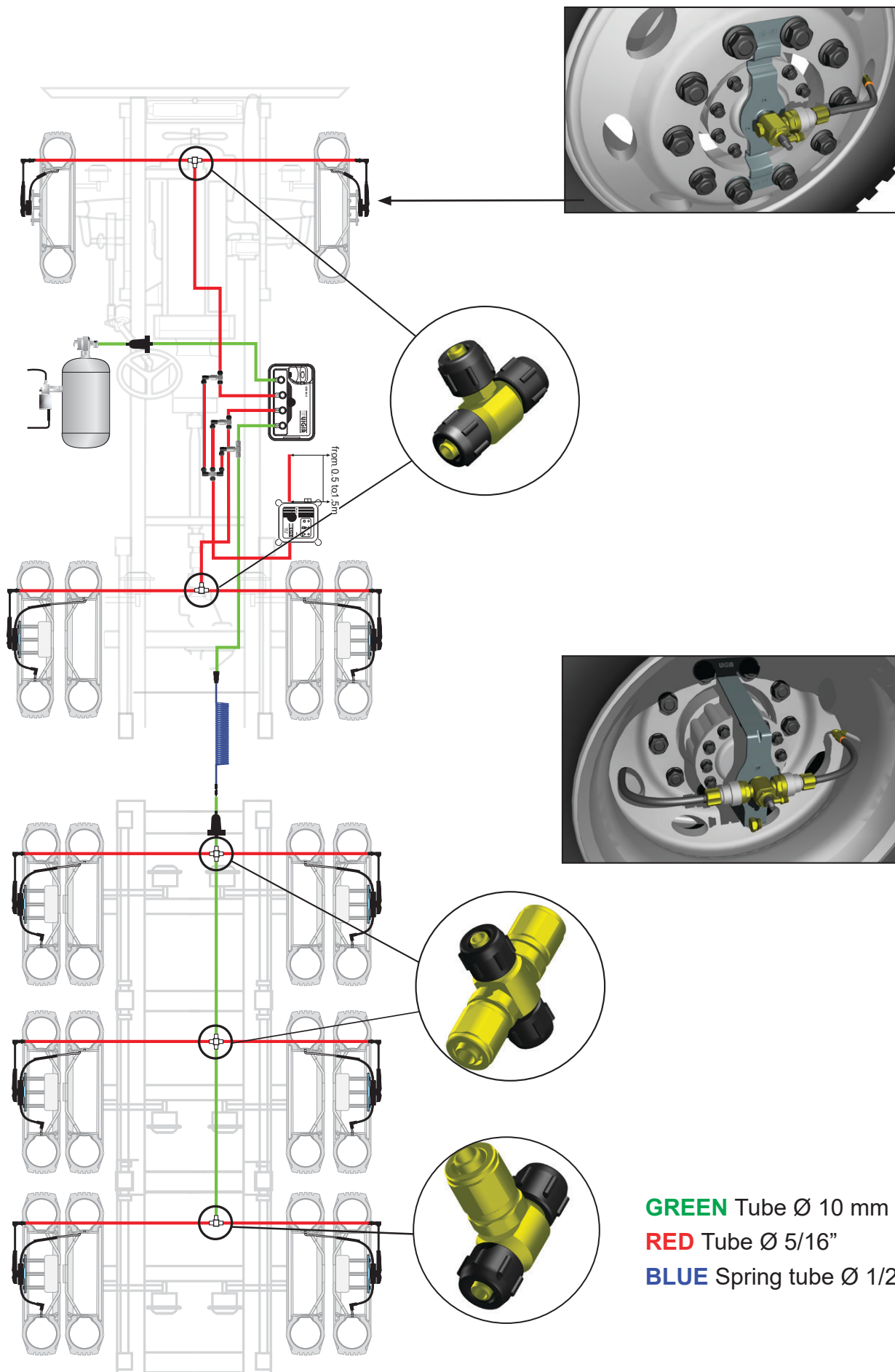
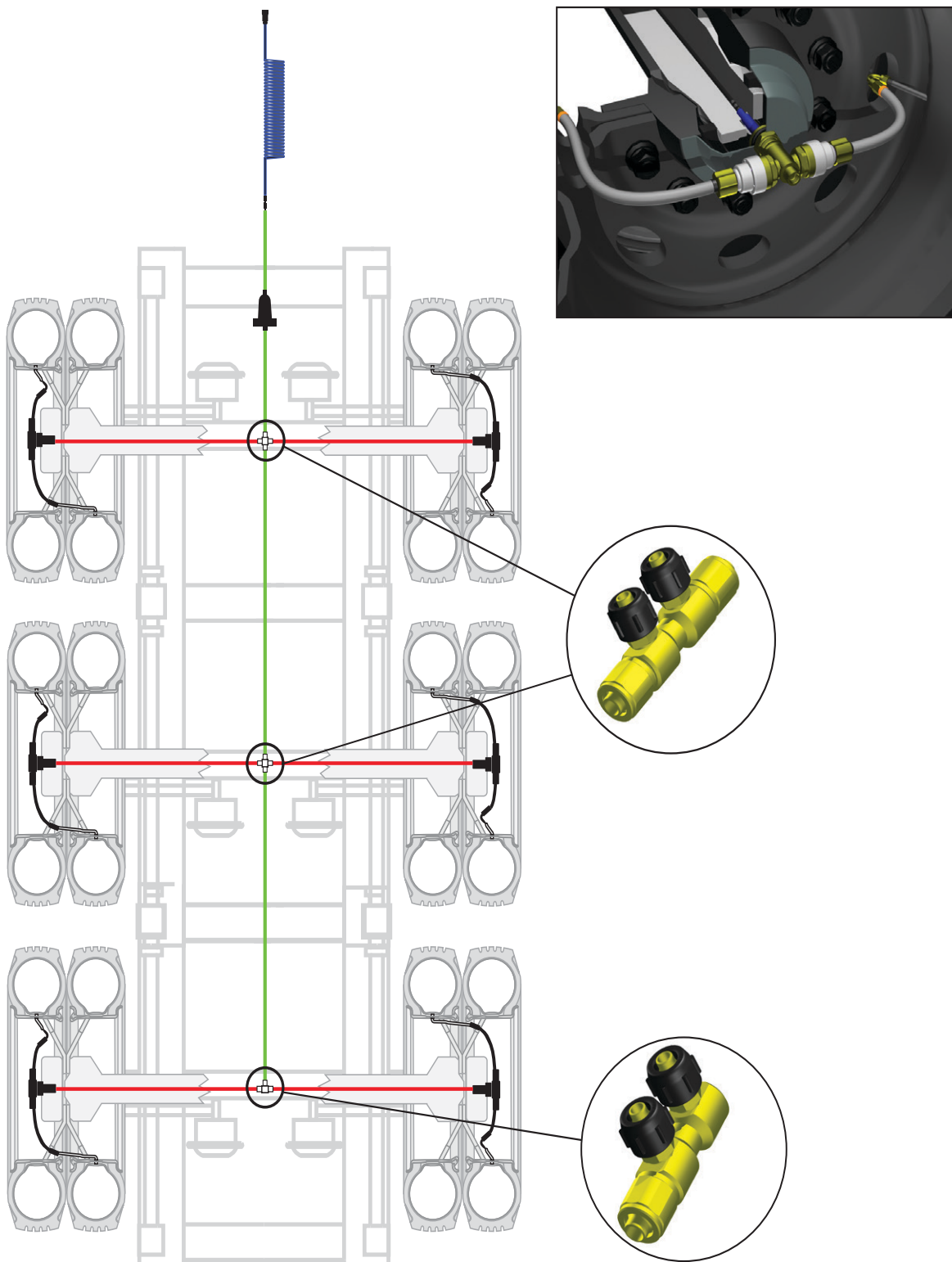


DIAGRAM TRUCK-TRACTOR 3 CIRCUITS 2 AXLES AND SEMI-TRAILER

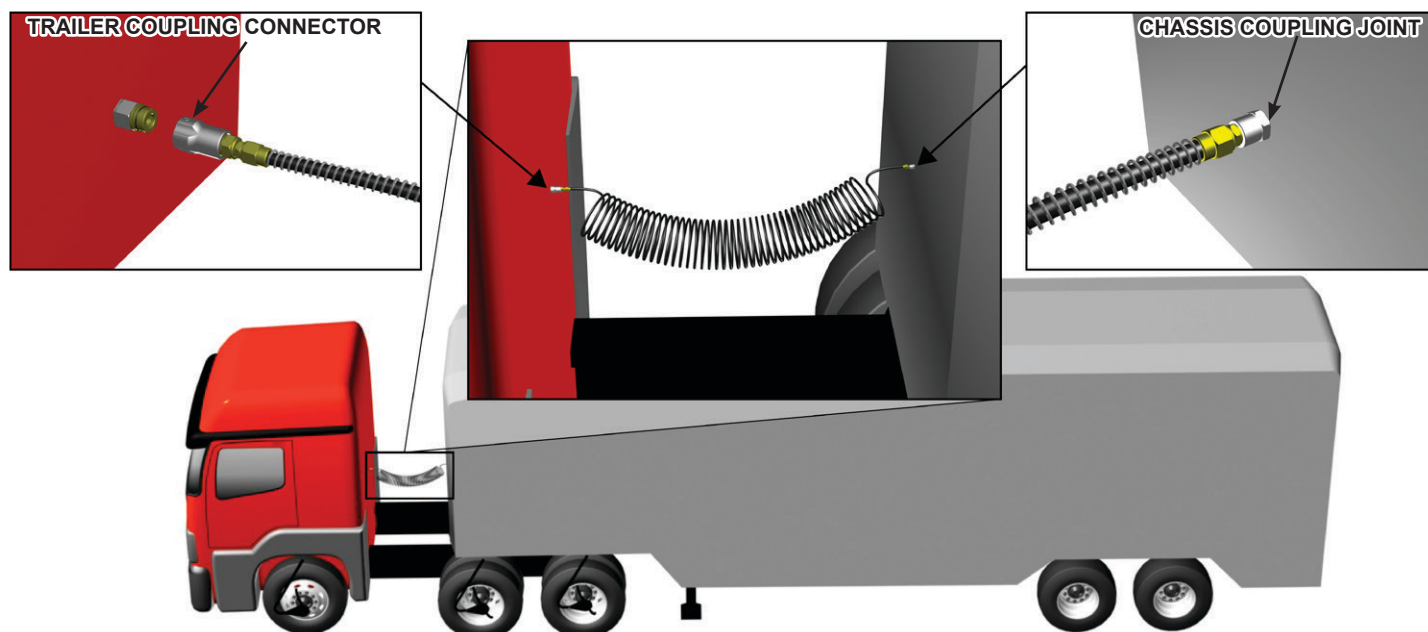


4.1.2: NM 448



GREEN Tube Ø 10 mm
RED Tube Ø 5/16"
BLUE Spring tube Ø 1/2"

4.1.2.2: Truck-tractor coupling to the trailer.



Important: Connect only the VIGIA System with the unit engine running.

4.1.2.3: Installation procedure



Very Important: Given the great variety of vehicles on the market, the installation of the air network will be subject to the installer criterion. However, in order to facilitate and to do a better job, we recommend complying with the following:

- Use only the tube provided with the System.
- Secure the VIGIA tube along its entire length, approximately every 40 cm (16"). If the clamping is close to the air pipes of the brake circuit or electrical installations, use the seals provided. If it is on the chassis or bodywork, use the special clamps or staples also provided.
- Drill the holes to fix the clamps, taking care not to affect pipes, tanks, electrical installations, etc.
- Do not install the tubes near heat sources (exhaust pipes, heating, etc.) or moving parts (steering, suspension, driving axle, spiders, etc.).
- Secure the tube in short sections close to the bodywork couplings, so that the detachment of a clamp or staple does not result a contact with the tire.

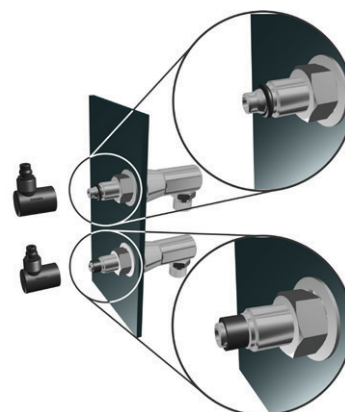
f) If the body coupling is too close to the wheels and it is necessary to bend the tube at 90°, use the elbow connector.

g) For its installation, use an O'ring, so that it works as a joint avoiding losses.



Explanation: In case of not using an O'ring, it can be replaced by the VIGIA tube. Proceeds as following:

- Assemble the end of the VIGIA tube in the terminal of the body coupling.
- Cut off the excess.
- Thread the elbow connector.



4.2: AIR INTAKE

Take into account the following details:

- a) Select a secondary tank that works at the same pressure than the compressor.



Important: Do not use the tank that supplies the brake system of the thrust axis and trailer.

Afterwards, follow these instructions:

- ✓ Remove a plug or other connections, or use the manual draining to depressurize completely the air tank.

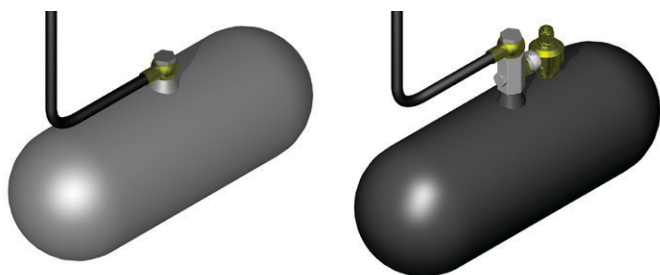


Very Important: Do not unscrew completely a plug. This could produce serious damages, since the air pressure inside the tank is too high. Depressurize the air tank by unscrewing partially the plug.

- ✓ Verify the thrust axle and trailer brakes work properly by pressing the brake pedal.

- b) Find a plug, connector, hose or screw that tightens directly an outlet pipe from the air tank or distribution valve where the blocking valve provided with the System will be installed.

- c) Take out the selected bolt or plug and insert the coupling and the blocking valve.



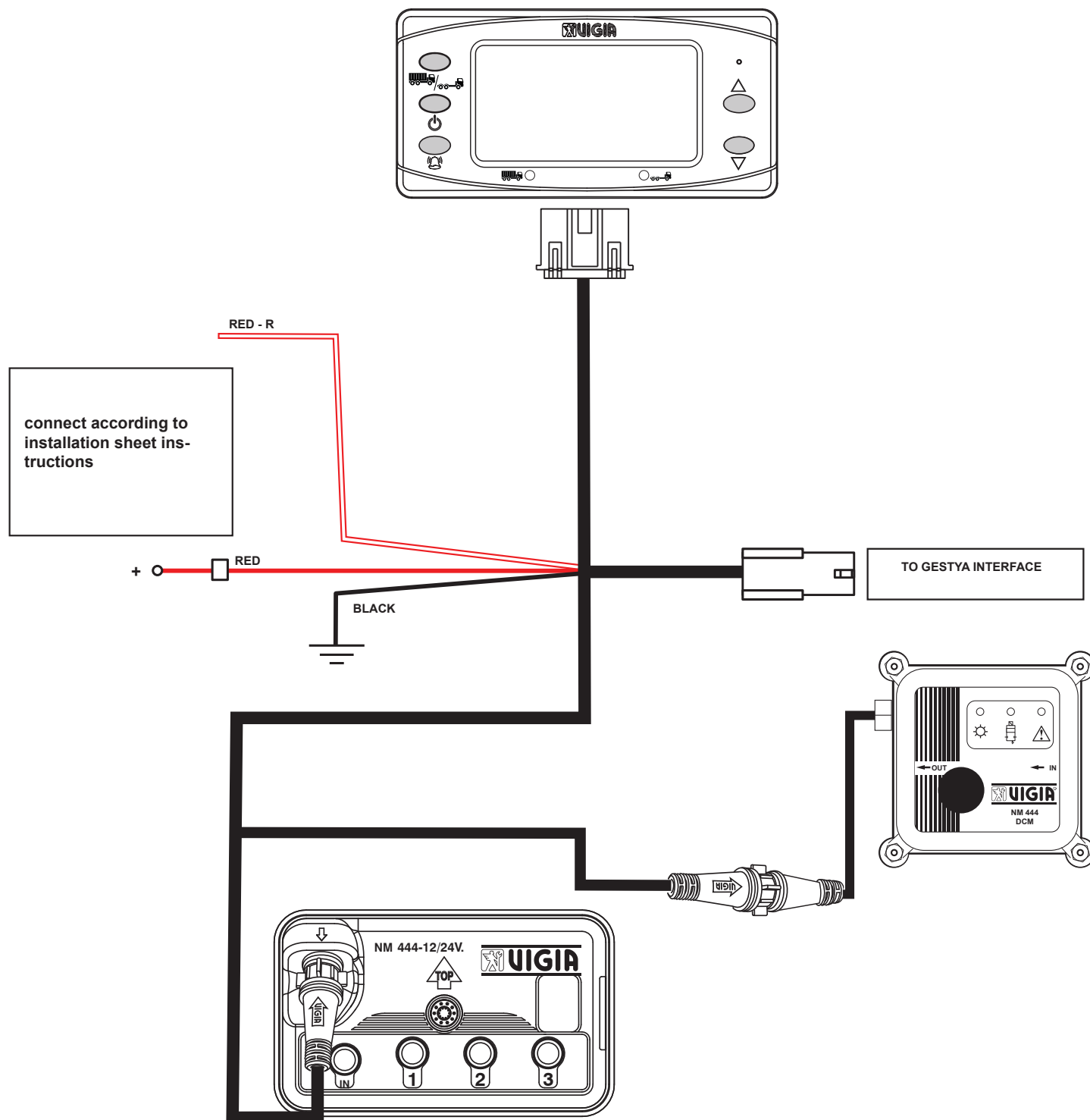
4.3: AUTOMATIC AIR PURGE VALVE



Very Important: In all NM 444 System, the AUTOMATIC AIR PURGE kit is included to be installed in the units. Proceed according to Annex 1 for its installation.

SECTION 5: ELECTRICAL CONNECTIONS

5.1: ELECTRICAL INSTALLATION





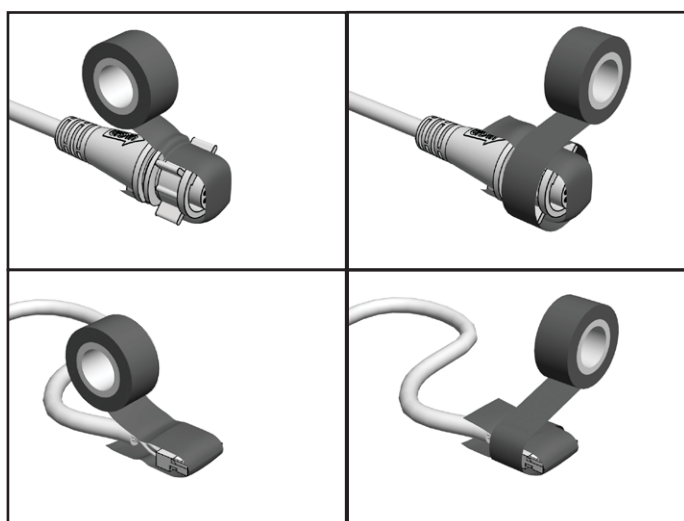
Explanation: The electrical installations are made with a protective nylon on the connectors, to prevent the entry of dirt, grease, etc. in the terminals when installing, when passing through the chassis, bodies and cabins.



Important: Do not remove the nylon before installation.






If, when carrying out this installation, for any reason this nylon would not be present, the connectors must be protected by means of electrical tape before installation, as shown in the pictures.



SECTION 6: FUNCTIONING



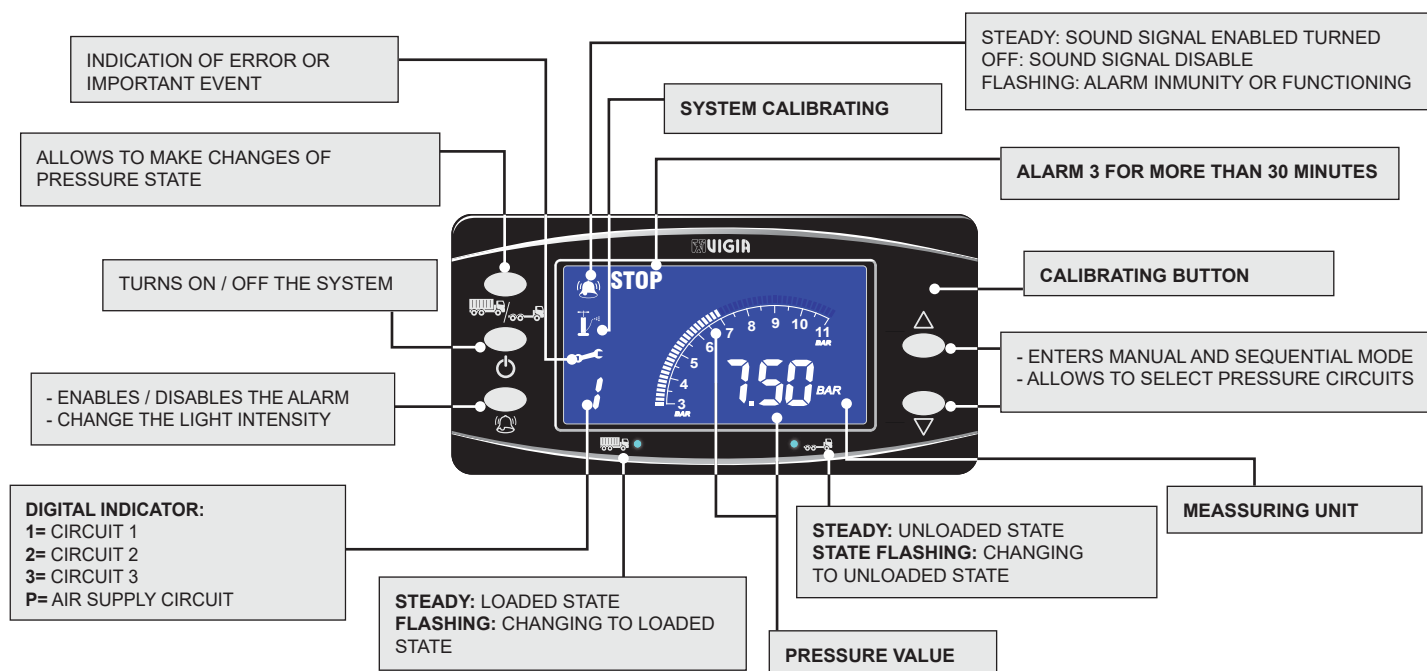
Very Important: As long as the inlet pressure does not exceed 0.7 BAR at the maximum calibration pressure of the 3 circuits in Loaded , the System stay in alarm immunity state or operation. Once there is 10 PSI above the maximum calibration pressure, the System will exit of alarm immunity and start to inflate if necessary.

The inflation module takes air from the auxiliary tank of the unit and distributes it to the pressure circuits. When the Loaded/Unloaded state is changed using the / button on the reading panel, the inflation module stops supplying air, giving rise to the depressurizing module to depressurize the air network of each circuit, allowing the IRD valve to change state. The latter waits for a new lower pressure value than the current one in the tire. Finally, the inflation module sends a new lower pressure value, causing the IRD valve to start deflating the tire until it reaches the balance pressure where the deflation cycle finally ends.



Explanation: For the Loaded/Unloaded sequence, the System directly injects air without the need to change the state of the IRD valve.

6.1: OPERATION




6.1.1: ACTIVATION

The System is automatically activated by unlocking the ignition switch and is deactivated by locking it.



Very Important: The inlet pressure **P** should be at least 0.7 BAR higher than the maximum pressure set in Loaded, for the System to begin the calibration process.



Explanation: The panel can be turned on and off by holding down  for 4 seconds even with the ignition key closed, but the System will not inflate the tires, only the circuit pressures will be displayed.



6.1.2: VISUALIZATION

The panel can display the pressures of the circuits in a sequential or manual mode.

6.1.2.1: Sequential mode

The pressure of circuit 1 is displayed for 5 seconds, then the pressure of circuit 2 for 5 seconds, then the pressure of circuit 3 for 5 seconds and then it goes back to the pressure of circuit 1 and so on. If an air leak is generated in more than one circuit, the panel will indicate only the fault circuits in sequential mode.

For example: If there is air loss in circuits 2 and 3, the display will indicate the pressure of circuit 2 for 5 seconds then the pressure of circuit 3 for 5 seconds and so on but it will not indicate the pressure of circuit 1.



6.1.2.2: Manual mode

If you want to view only one circuit constantly, press and hold ▲ or ▼ for 3 seconds, to switch to manual mode, then you can view the pressures of circuits 1, 2, 3 and supply pressure P by pressing the keys ▲ or ▼.

To change to sequential mode press and hold ▲ or ▼ for 3 seconds. However, if there is a loss of pressure (punctured tire) the panel automatically switches to sequential mode to inform the driver of such situation.



Explanation: After 1 minute the panel automatically returns to sequential mode.



3 SECONDS

6.1.3: ALARM LEVELS


The panel will indicate the magnitude of the loss as follows:

6.1.3.1: Alarm 1

 flashing and sound signal every 10 seconds.




6.1.3.2: Alarm 2

 flashing, scale in BAR and PSI alternately and sound signal every 4 seconds.



6.1.3.3: Alarm 3

 steady on, flashing panel and continuous sound signal.





Important: After 30 minutes indicating alarm 3, STOP lights up.



Very Important: Stop the unit immediately and repair the fault as soon as possible.

6.1.3.4: Cancellation for excessive leakage

When there is an excessive leakage in a tire (blowout) or in the VIGIA network and the System cannot maintain the pressure of the circuit, it will automatically cancel the air passage and indicate   E01, alarm 3 and the circuit in question:



6.1.3.5: Low pressure in the tank

When there is low air pressure in the tank (below 5.5 or 8 BAR), the System automatically deactivates and indicates the inlet pressure **P** warning the driver with alarm 3.



6.1.3.6: Not optimal air pressure in the tank (LoP)

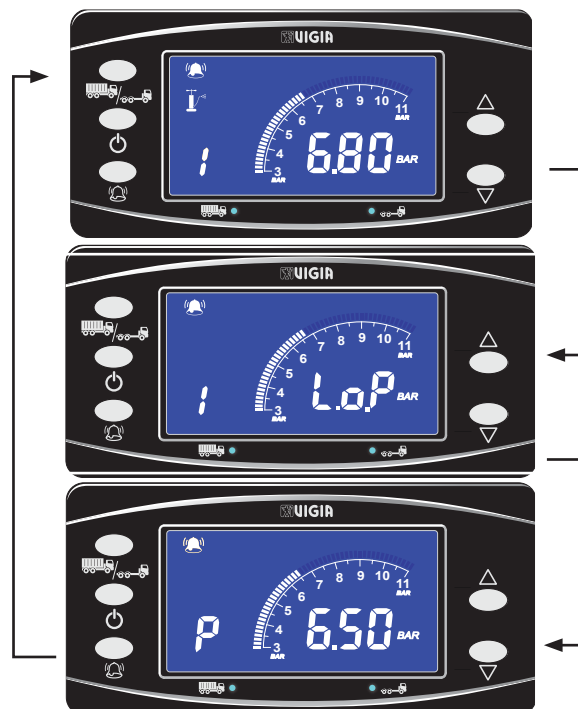
If a circuit is calibrating and the inlet pressure **P** is up to 0.7 BAR higher than the circuit calibration pressure, it will alternately indicate the circuit in question and **LoP** with the corresponding alarm sound signal and **P** with its current value.



Important: The System will be able to calibrate the tires but it will take longer.




6.1.3.7: Insufficient air pressure in the tank (L.o.P)

If there is a circuit being calibrated and the inlet pressure **P** is equal to or less than the calibration pressure of the circuit, it will alternately indicate the circuit involved and **L.o.P** with a corresponding alarm signal and **P** with its current value.





Very Important: The System will not be able to calibrate the tires.

6.1.3.8: Sound signal cancellation

If you want to cancel the alarm, press , the indicator  on the panel will turn off, however if the loss of pressure continues it will be activated automatically after 20 minutes have elapsed, being able to cancel it again by pressing .



6.1.3.9: Display luminous intensity

If you want to modify the light intensity of the display, hold down  which will increase the intensity until it reaches a maximum and then it will fall to a minimum to increase again and so on. At the moment it shows the desired light intensity, release .

6.2: CHANGES OF STATES





Very Important: While the system is in alarm immunity state or operation, it will NOT allow state changes ( and  led or  led flashing).

6.2.1 FROM LOADED PRESSURE TO UNLOADED PRESSURE



Very Important: Drive only with the unit loaded and at unloaded pressure in emergency situations (soft ground, sand, mud, dunes, others).


Do not perform Loaded to Unloaded state change with the unit loaded and with speeds above 35 km/h. DO NOT drive with the unit loaded in a Unloaded pressure state at speeds greater than 35 km/h.

If you want to go from Loaded to Unloaded state, keep the key /  pressed for 3 seconds.



The system will alternately show the following indications and sound signal waiting for the confirmation order.





To confirm, press the key  for 4 seconds.




Once the state change is confirmed, the panel will alternately display the following indications:





During the deflation process, the  led and  will blink until the process is completed.





Very Important: If during the deflation process, the ignition key is closed, the system **DOES NOT** cancel the process until the  indication led is steady. After that, the panel will turn off completely.












Explanation: The  indicator led will be steady when the values of the set pressures are reached, but the indicator  will remain flashing for another 20 seconds, indicating that it is in alarm immunity. After that period of time, the system goes into normal operation.







6.2.1.1: Unloaded pressure warnings




First warning: If when opening the ignition key, the System is in unloaded pressure state, then alarm immunity and operation, it will indicate  on the panel plus the sound signal and the  led on, warning the driver that the System is in unloaded pressure state.









i **Explanation:** To exit this screen and return to the normal state menu, there are two options: press any key /, ,  or , except the key  (no action), or wait 1 minute to exit automatically without pressing any key.

Second warning: After 5 minutes of the first warning, the system will remind you that the tire is in unloaded pressure state indicating on the panel  in any of the 3 circuits  plus the sound signal and the  led on, for 15 seconds.

i **Explanation:** To exit this screen and return to the normal state menu, there are two options: press any key /, ,  or , except the key  (no action), or wait 15 seconds to exit automatically without pressing any keys. In the case of canceling through any key a new warning will be added after the third warning.

Third warning: After 10 minutes of the first warning, the system will show  on the panel in any of the 3 circuits  plus the sound signal and the  led on, for 20 seconds warning the driver that the System is in unloaded pressure state.



Explanation: To exit this screen and return to the normal state menu, there are two options: press any key /, ,  or , except the key  (no action), or wait 20 seconds to exit automatically without pressing any keys. In the case of canceling through any key a new warning will be added.





Very Important: During these warnings, the equipment will supply air normally if required.

6.2.2 FROM UNLOADED PRESSURE TO LOADED PRESSURE



Very Important: DO NOT change state from Unloaded to Loaded with the unit in motion. To change from Unloaded to Loaded state the unit must be idle (stopped) for at least 3 hours to avoid incorrect calibration pressure.



If you want to go from Unloaded to Loaded state, keep the key / pressed for 3 seconds.



The system will alternately display the following indications and begin to inflate the tires of the circuits.





Explanation: The  led will be steady when the values of the set pressures are reached, but the indicator  will remain flashing for another 20 seconds, indicating that it is in alarm immunity. After that period of time, the system goes into normal operation.



Important: If at the moment of changing the state from Unloaded to Loaded, some of the circuits are calibrating in alarm 1 and 2; the System will allow to change the state but the alarm level will remain due to the fact that the unit is in an abnormal situation. In alarm 3 it will not allow changes of states.



Very Important: If the ignition key is closed during the state change, the system cancels the process and shuts down completely. When the ignition key is opened again, it will go through the alarm and operation immunity process, then continue with the tire inflation, but in some cases, it is possible that alarm 1 or 2 indicators may appear that not necessarily refer to punctured tires, but they are being inflated due to the previously interrupted process of changing the state from Unloaded to Loaded.

6.3: REGULATION OF THE SYSTEM FOR THE CALIBRATION OF TIRES






Very Important: To avoid structural damage, low tire performance and to maintain safe driving conditions, it is suggested not to calibrate them at a pressure lower than that indicated by the manufacturer (see pressure table with respect to load).



Important: The different pressures can be calibrated from 1.3 BAR (18 PSI) to 11 BAR (160 PSI).





Explanation: The maximum pressure difference between Unloaded  state and Loaded  state is 70% of the Loaded  state setting.

With the ignition key open, press the calibration button for 4 seconds with the tool code X3430.A029-5. A continuous beep will sound confirming that you have entered calibration mode.





6.3.1: UNIT OF MEASURE

With  or  select the BAR o PSI unit. Then press the calibration button.



6.3.2: CIRCUIT 1 LOADED PRESSURE

With  or  modify until the desired calibration value appears. Then press the calibration button.



6.3.3: CIRCUIT 2 LOADED PRESSURE

With ▲ or ▼ modify until the desired calibration value appears. Then press the calibration button.



6.3.4: CIRCUIT 3 LOADED PRESSURE

With ▲ or ▼ modify until the desired calibration value appears. Then press the calibration button.



6.3.5: CIRCUIT 1 UNLOADED PRESSURE

With ▲ or ▼ modify until the desired calibration value appears. Then press the calibration button



6.3.6: CIRCUIT 2 UNLOADED PRESSURE

With ▲ or ▼ modify until the desired calibration value appears. Then press the calibration button



6.3.7: CIRCUIT 3 UNLOADED PRESSURE

With ▲ or ▼ modify until the desired calibration value appears. Then press the calibration button.




Then press the calibration button for 4 seconds and a confirmation beep will be activated and the panel will automatically go into sequential mode.

6.3.8: INLET PRESSURE

The default setting is 5.5 BAR/80 PSI and must be modified, depending on the blocking valve installed on the unit.

In case the inlet pressure needs to be modify, proceed as follows:

- Close the ignition key.
- Hold down for 3 seconds  and the calibration button simultaneously.
- With ▲ or ▼ the value can be modified between 5.5 BAR/80 PSI y 8 BAR/116 PSI.
- To confirm the value, keep the calibration button pressed for 3 seconds, a sound signal will be heard 3 times and the display will turn off.






Very Important: EVERY NM 444 system must be installed with blocking valve.

6.4: INDICATIONS OF LOSSES, DEPENDING ON THE INPUT PRESSURE WITH REGARD TO THE CALIBRATION PRESSURE



Very Important: The inlet pressure must be at least 0.7 BAR more than the maximum pressure set in Loaded, so that the System begins the calibration process.

GOOD PRESSURE TO INFLATE	NOT OPTIMAL PRESSURE	INSUFFICIENT PRESSURE
<p>Works as input/output gauge</p> <p>Calibrated pressure</p>  <p>6.2 BAR 6.9 BAR 7.6 BAR</p>	<p>Works by pressure</p> <p>Calibrated pressure</p>  <p>6.2 BAR 6.9 BAR 7.6 BAR</p>	<p>Works by pressure</p> <p>Calibrated pressure</p>  <p>6.2 BAR 6.9 BAR 7.6 BAR</p>
<p>- Alarm 1</p> <p>Loss volume between 4 l./min. -10 l./min.</p> <p>Important: If the volume is lower than 4 l./min. the System offsets this loss though it does not show it..</p>	<p>- Alarm 1</p> <p>When tyre pressure is higher than 92% of calibrated pressure. Loss indication plus LoP.</p>	<p>- Alarm 1</p> <p>When tyre pressure is higher than 92% of calibrated pressure. Loss indication plus L.o.P.</p>
<p>- Alarm 2</p> <p>Loss volume between 10 l./min -18 l./min.</p>	<p>- Alarm 2</p> <p>Tyre pressure is between 85% and 92% of calibrated pressure. Loss indication plus LoP.</p>	<p>- Alarm 2</p> <p>Tyre pressure is between 85% and 92% of calibrated pressure. Loss indication plus L.o.P.</p>
<p>- Alarm 3</p> <p>Volume higher than 18 l./min.: The System assesses whether tyre pressure is lower than 85% of calibrated pressure and triggers an appropriate alarm; every 90 seg. seconds, the electrically operated valve is closed for 4 seconds and the tyre pressure is measured.</p>	<p>- Alarm 3</p> <p>Volume higher than 18 l./min.: The System assesses whether tyre pressure is lower than 85% of calibrated pressure and triggers an appropriate alarm; every 90 seconds, the electrically operated valve is closed for 4 seconds and the tyre pressure is measured. Loss indication plus LoP</p>	<p>- Alarm 3</p> <p>Volume higher than 18 l./min.: The System assesses whether tyre pressure is lower than 85% of gauging pressure and triggers an appropriate alarm; every 90 seconds, the electrically operated valve is closed for 4 seconds and the tyre pressure is measured. Loss indication plus L.o.P.</p>

SECTION 7: MAINTENANCE

7.1: AIR FILTER

For its proper functioning, the filter must be clean at least twice a year, in accordance to the needs and usage conditions.

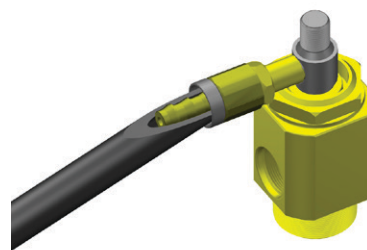
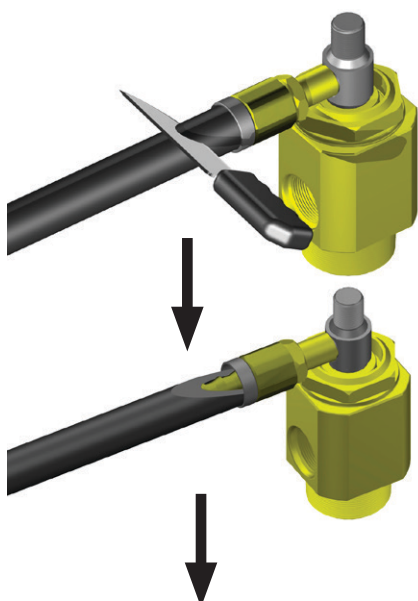
- When disassembling for the air filter for cleaning, pay attention to the order of each component.
- When assembling, lubricate the O'ring.



7.2: DOWNWARD DUCT SYSTEM

When repairing, replace the Push-lok hose; to disconnect it proceed as following:

- Make a straight cut of the outer rubber cap.
- Cut the mesh.
- Make pressure by hand on the hose and cut the internal rubber (cut very carefully to avoid damaging the terminal).



7.3: HOW TO DETERMINE THE SOURCE OF THE LOSS

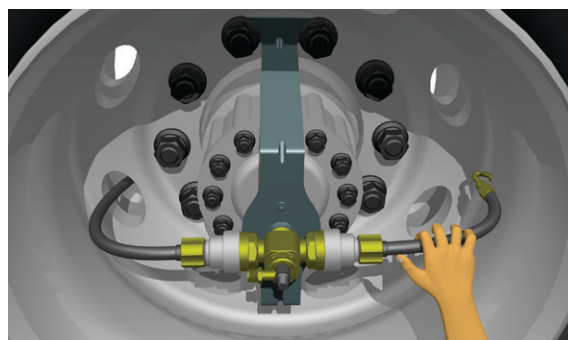
7.3.1: IN THE VIGIA SYSTEM:

With the ignition key closed, turn on the panel by keeping it pressed for 4 seconds, the System will not inflate the tires, it will only be able to display the pressures. If the pressure in the panel decreases and the pressure of all the tires remains, the loss is in the air network of the VIGIA System.



7.3.2: IN THE TIRE:

Activate the System and touch the hoses near the tires. The one that vibrates determines which of them is the punctured one.



















SECTION 8: FAULT CODES






The System will be canceled automatically and the panel will indicate the problem as follows:



Important: Tires with no protection.



INDIVIDUAL FAULTS PER AXLE		
INDICATION	POSSIBLE CAUSE	SOLUTIONS
 <p>+ sound signal alarm 2</p>	Module internal failure.	Replace the module
 <p>+ sound signal alarm 2</p>	Module internal failure.	Replace the module

GENERAL FAILURES		
INDICATION	POSSIBLE CAUSE	SOLUTIONS
      	<ul style="list-style-type: none"> - Communication problems between the module and the panel. - Failure in the module. - Panel failure. 	<ul style="list-style-type: none"> - Check electrical installation, if there are cut wires, sulfated connectors or moisture in contacts. Replace the electrical installation. - Replace the module. - Replace the panel.
	High temperature in the module (over 100C°).	Wait until temperature decreases. If this fault persists or happens again, replace the module.
	Low temperature in the module (Less than -15 C°).	Wait until temperature increases. If this fault persists or happens again, replace the module
	High supplying voltage (over 30.5 V.).	Ask an electrician to check on the unit's electrical system.
	Low supplying voltage (less than 9.5 V.).	<ul style="list-style-type: none"> - Revise supply connections (permanent positive and mass). - Ask an electrician to check on the unit's electrical system.
	<ul style="list-style-type: none"> - Electrical installation failure. - Module internal failure. 	Check on electrical linkages; panel and module connections.
	- Inflation module or panel communication failure when selecting change of state.	<ul style="list-style-type: none"> - Verify the connection to the module. - Replace the module or panel.
	- Delay in theinflation process after a change from Unloaded to Loaded state.	<ul style="list-style-type: none"> - Verify the inlet pressure. - Replace the command control module and control.

GENERAL FAILURES		
INDICATION	POSSIBLE CAUSE	SOLUTIONS
	<ul style="list-style-type: none"> - Inflation module or panel communication failure during a state change from Loaded to Unloaded. 	<ul style="list-style-type: none"> - Check the connection to the shunt block. - Verify the electrical connection of the depressurizing module. - Verify the depressurizing module functioning. - Check that the outlet tube of the depressurizing module is not blocked.
	<ul style="list-style-type: none"> - Inflation module or panel communication failure when finishing a change of state. 	<ul style="list-style-type: none"> - Verify connection problems between the module and the panel. - Replace the command module and control. - Replace the panel.
 	<ul style="list-style-type: none"> - Communication failure with the depressurizator module. - Disconnection from the depressurizator module. - Failure or breakage of the depressurizator module. 	<ul style="list-style-type: none"> - Verify connection of the depressurizing module. - Verify connection of the depressurizing module. - Replace the module
	<ul style="list-style-type: none"> - Failure in the depressurizator module. - Depressurization circuit clogged. 	<ul style="list-style-type: none"> - Verify connection of the depressurizing module. - Replace the module. - Verify the outlet hole of the depressurizing module. - Replace the module.



Note: To see voltage and temperatures values in the panel, follow these steps:

- 1- Go into gauging mode.
- 2- Press and hold  for 3 seconds to visualize **b** and voltage (for example, **b14**, which means battery 14 V.).
- 3- Press , once to visualize **C** and temperature (for example, **C 32** means 32°C).
- 4- To exit, press the calibrating button.



ATTACHED 1

9.1: AUTOMATIC AIR PURGE VALVE

9.1.1: FUNCTIONING AND APPLICATION

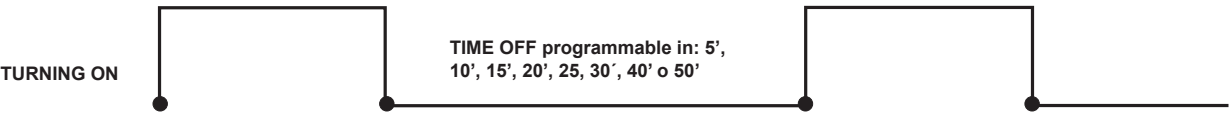
An electronic module sends a signal to the electrovalves, releasing to the outside the liquids existing inside the air tank.

The operating cycle can be programmed through the keys located on the module, allowing the time the electrovalves will remain open (T ON) and the time they will remain closed (T OFF) to be modified



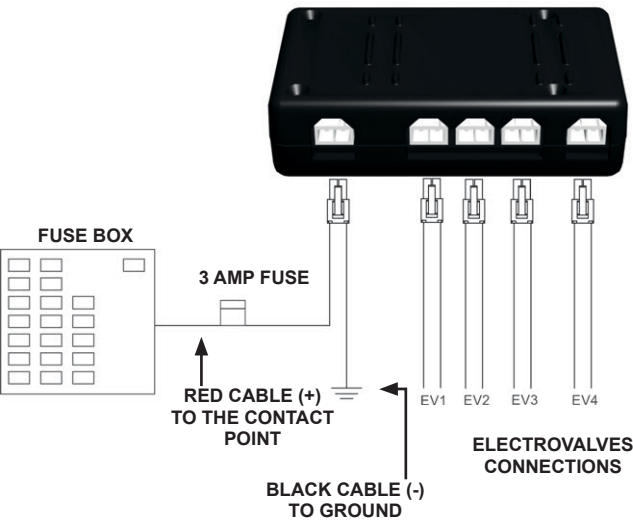
TIME ON programmable in: 3", 5", 7", 10", 12", 15" 20" o 25"

TIME ON programmable in: 3", 5", 7", 10", 12", 15" 20" o 25"

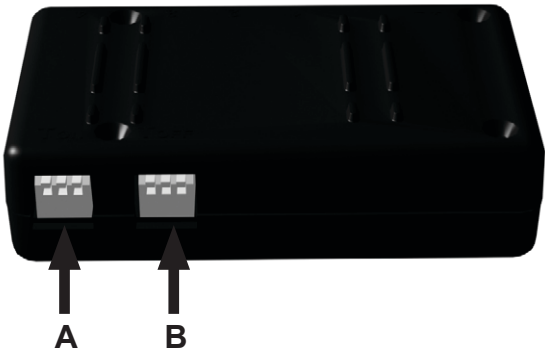


Note: The default values are time ON 3 seconds and time OFF 5 minutes.

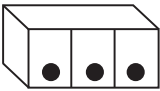
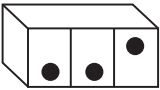
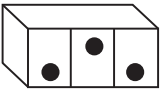
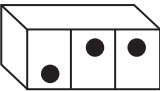
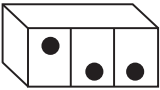
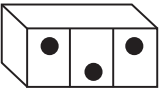
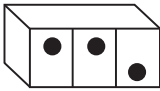
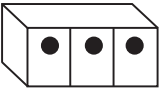
9.1.2: ELECTRICAL CONNECTIONS



9.1.3: PROGRAMMING



A) OPENING TIME OF THE ELECTROVALVE (ON SECONDS)	
3"	
5"	
7"	
10"	
12"	
15"	
20"	
25"	

B) TIME THE ELECTROVALVE REMAINS CLOSED (OFF MINUTES)	
5'	
10'	
15'	
20'	
25'	
30'	
40'	
50'	

9.1.4: TECHNICAL FEATURES

Power: 12-24 V.

Consumption when 1 electrovalve is activated:

0.8 Amp. in units of 12 V.

1.8 Amp. in units of 24 V.

Continuous consumption: ± 1 mA. en 12 V.
 ± 2 mA. en 24 V.

Module not suitable for outdoors use

Polarity inversion protection.

High voltage spike protection.

Electrovalve closed

Operating range. from 0°C to 70°C

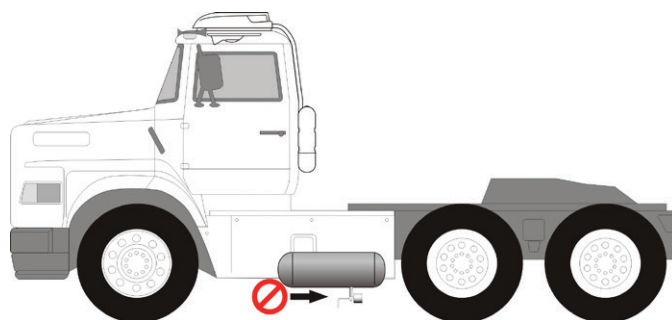
9.1.5: INSTALLATION PROCEDURE

For correct assembly and subsequent operation, it is essential to take into account the following procedure:

1. Completely empty the air tank that you want to purge automatically.



Note: If the unit's tank is located below the axle line, it must be installed as indicated in OPTION 1.



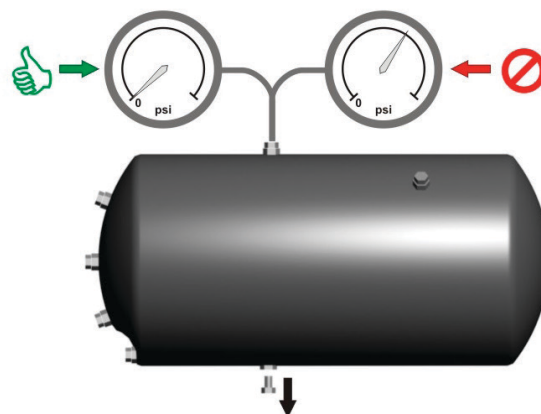
Explanation: Assemble the electrovalve preferably using the short coupling, so that it is not too close to the ground.



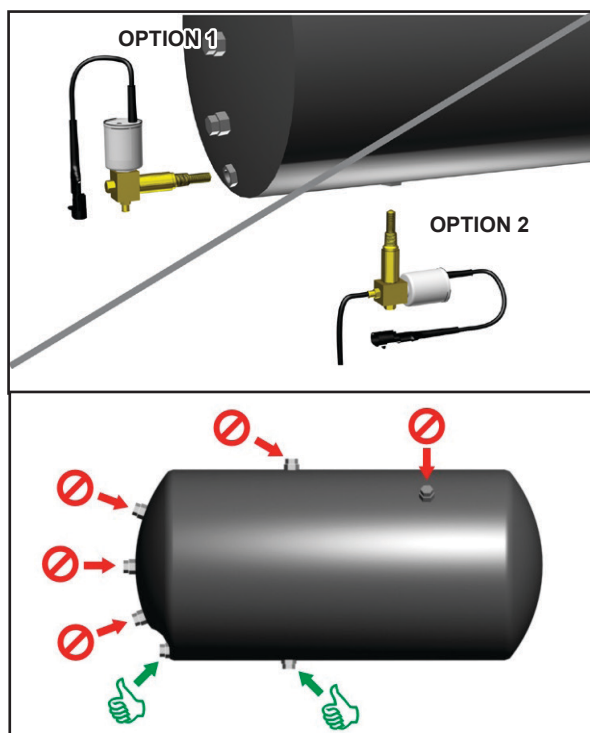
Important:

a) Do not completely unscrew the lower cap or the manual purge if the tank has air pressure.

b) In units with pneumatic suspension, the bodywork must be chocked or work from a pit.

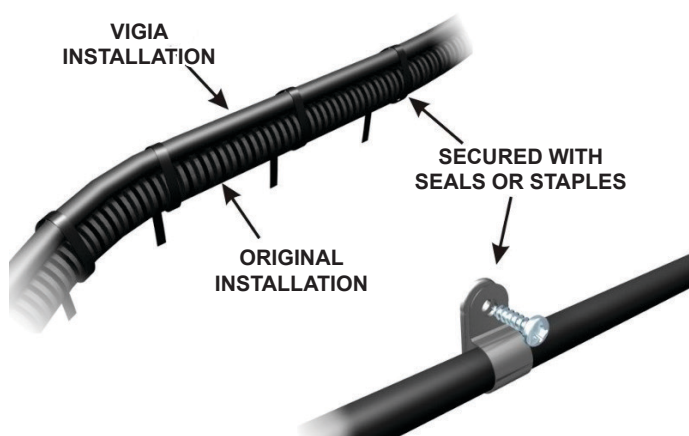


1. Clean the tank allowing all impurities to drain. If there is a mixture of water with oil and solid impurities inside the tank, remove it and wash it properly or, alternatively, blow it internally with diesel or kerosene from the lower hole.
2. Place the electrovalve using the corresponding coupling according to the original thread of the tank



Electrical installation:

Secure with seals or staples to the original electrical or pneumatic installation of the unit.

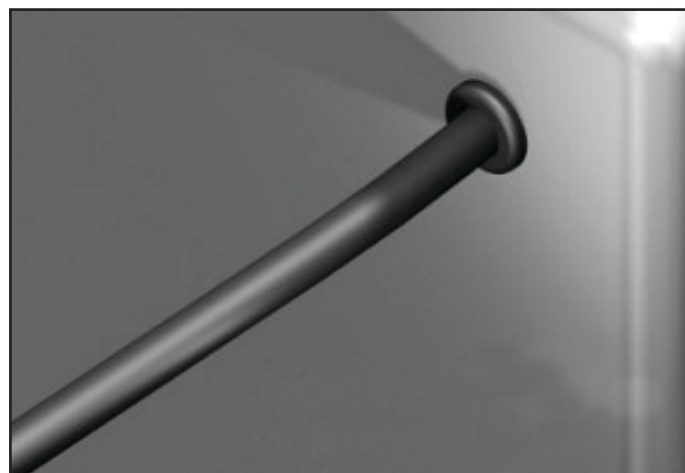


Going into the cabin

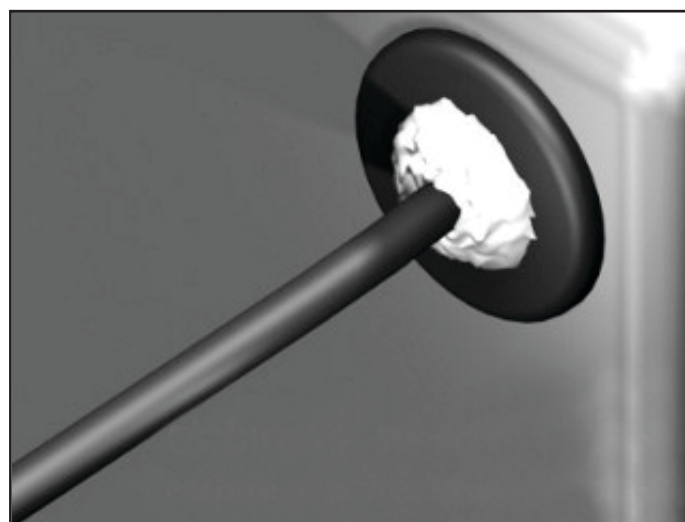
Option 1: Enter next to the original electrical installation through the existing pin.



Option 2: Drill a hole and use a provided grommet.



Option 3: Drill an existing cap, make the installation and seal properly.



9.1.6: MAINTENANCE

It only requires cleaning the internal filter.

Every 6 months:

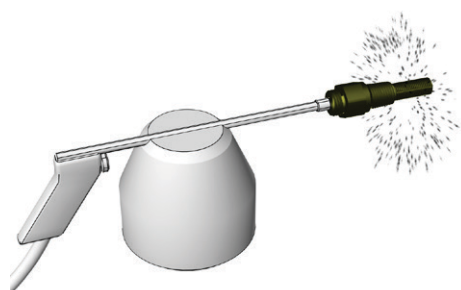
a) Unscrew the electrovalve from the air tank.



b) Remove the filter.



c) Properly clean the filter by blowing it with diesel.



Very Important: If dirt with oil is observed when blowing the filter, proceed to check the air intake of the compressor and the engine.

ATTACHED 2

10.1: HOW TO DETERMINE THE CORRECT PRESSURE



Explanation: The same procedure is followed in the determination of the weight per axle of the empty vehicle, as well as in the loaded vehicle.

Verify the axle weight → **use scales**

Divide the measured axle weight by the number of tires on the axle

Example:

Axle weight = **10.820 kg**

Dual assembly axle = **4 tires**

Weight per tire = **2.705 kg**



See the Pressure per Loads Table

How to use the pressure x loads table

Dimension	Load index		Inflation pressure -BAR													
			4.5 (65)	4.8 (70)	5.2 (75)	5.5 (80)	5.8 (85)	6.2 (90)	6.5 (95)	6.9 (100)	7.3 (105)	7.6 (110)	8.0 (115)	8.5 (120)	9 (130)	
			Load per tire in kg													
255/70R22.5	140/137	D	-	1545	1635	1720	1805	1890	1975	2055	2140	2220	2300	-	-	-
		S	-	1680	1775	1870	1965	2055	2145	2235	2325	2415	2500	-	-	-
275/70R22.5	148/145	D	-	1765	1870	1965	2065	2160	2255	2350	2445	2535	2630	2720	2810	2900
		S	-	1920	2030	2135	2240	2345	2450	2555	2655	2755	2855	2955	3055	3150
285/75R24.5	144/141	D	1690	1795	1895	1995	2095	2195	2290	2385	2480	2575	-	-	-	-
		S	1840	1950	2060	2170	2280	2385	2490	2595	2700	2800	-	-	-	-
285/75R24.5	147/144	D	1715	1820	1920	2025	2125	2225	2325	2420	2515	2610	2705	2800	-	-
		S	1885	2000	2110	2225	2335	2445	2550	2660	2765	2870	2970	3075	-	-
295/75R22.5	146/143	D	1750	1860	1950	2060	2130	2220	2300	2390	2470	2575	2630	2725	-	-
		S	1935	2040	2140	2240	2340	2440	2500	2620	2710	2800	2890	3000	-	-
305/75R24.5	154/149	D	1925	2045	2160	2275	2385	2500	2610	2720	2825	2935	3040	3145	3250	-
		S	2220	2360	2490	2625	2755	2885	3010	3135	3260	3385	3510	3630	3750	-
275/80R22.5	152/149	D	-	1875	1975	2075	2175	2275	2375	2475	2575	2675	2775	2875	-	-
		S	-	2025	2125	2225	2325	2425	2525	2625	2725	2825	2925	3025	-	-
295/80R22.5	152/149	D	-	2025	2125	2225	2325	2425	2525	2625	2725	2825	2925	3025	-	-
		S	-	2175	2275	2375	2475	2575	2675	2775	2875	2975	3075	3175	-	-
295/80R22.5	154/149	D	-	2150	2260	2370	2480	2590	2705	2815	2925	3035	3140	3250	-	-
		S	-	2300	2410	2520	2630	2740	2855	2970	3085	3195	3305	3415	-	-
315/80R22.5	154/150	D	-	2300	2410	2520	2630	2740	2855	2970	3085	3195	3305	3415	-	-
		S	-	2450	2560	2670	2780	2890	3005	3120	3235	3345	3455	3565	-	-
315/80R22.5	156/150	D	-	2450	2560	2670	2780	2890	3005	3120	3235	3345	3455	3565	-	-
		S	-	-	2660	2800	2940	3075	3210	3345	3480	3610	3740	3870	4000	-

1. Start with the size of the tire.

2. Choose within the size if it is a single (S) or dual (D) assembly axle





















4. See the corresponding pressure.









3. Scroll up to the weight value immediately higher than the calculated per tire.



Explanation: The calibration value in the table will be a theoretical starting point, since it only considers the "static weight" factor per axle, without taking into account the dynamic effects produced by speed, the action of the vehicle's aerodynamics, etc. From the table value, the user must set the inflation pressure value to levels that achieve an optimal level of wear. These values will differ for different types of service and vehicles with different body configurations (for example, the inclusion or not of deflectors on the cabin roof, etc.).

10.2: SUGGESTED MINIMUM PRESSURE TABLE

	Front Axle Minimum Pressure (BAR)	Driving Axle Minimum Pressure (BAR)	Auxiliary Axle Minimum Pressure (BAR)	
	A	6.2	-	-
	A	6.2	6.2	-
	A	6.2	6.2	-
	A	6.2	6.2	-
	A	6.2	6.2	-
	A	6.2	6.2	-
	A	6.2	6.2	-
	Front Axle Minimum Pressure (BAR)	Driving Axle Minimum Pressure (BAR)	Auxiliary Axle Minimum Pressure (BAR)	Acoplado Presión Mínima (BAR)
	A	6.2	-	6.2 /C
	A	6.2	-	6.2 /C
	A	6.2	6.2	6.2 /C
	A	6.2	6.2	6.2 /C
	A	6.2	-	6.2 /C
	A	6.2	-	6.2 /C
	Front Axle Minimum Pressure (BAR)	Driving Axle Minimum Pressure (BAR)	Auxiliary Axle Minimum Pressure (BAR)	Semirremolque Presión Mínima (BAR)
	B	6.2	-	6.2 /C
	B	6.2	-	6.2 /C
	B	6.2	-	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	-	6.2 /C

	B	6.2	-	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C
	B	6.2	6.2	6.2 /C

References:

A) It is necessary to know the curb weight for each axle, as well as to take into account the distribution of the load on the unit. Select the correct pressure in the ALAPA manual table.

B) Keep in mind that in this type of units, the weight on the front axle can vary with the unit loaded or unloaded. Modify the pressure calibration based on the characteristics and configuration of the unit (location of the coupling plate/fifth wheel), working conditions and type of road.
Select the correct pressure in the ALAPA manual table.

C) Pressure value that can vary from one unit to another depending on their construction characteristics.

10.3: TIRES NOMENCLATURE AND ALAPA TABLE OF 2021

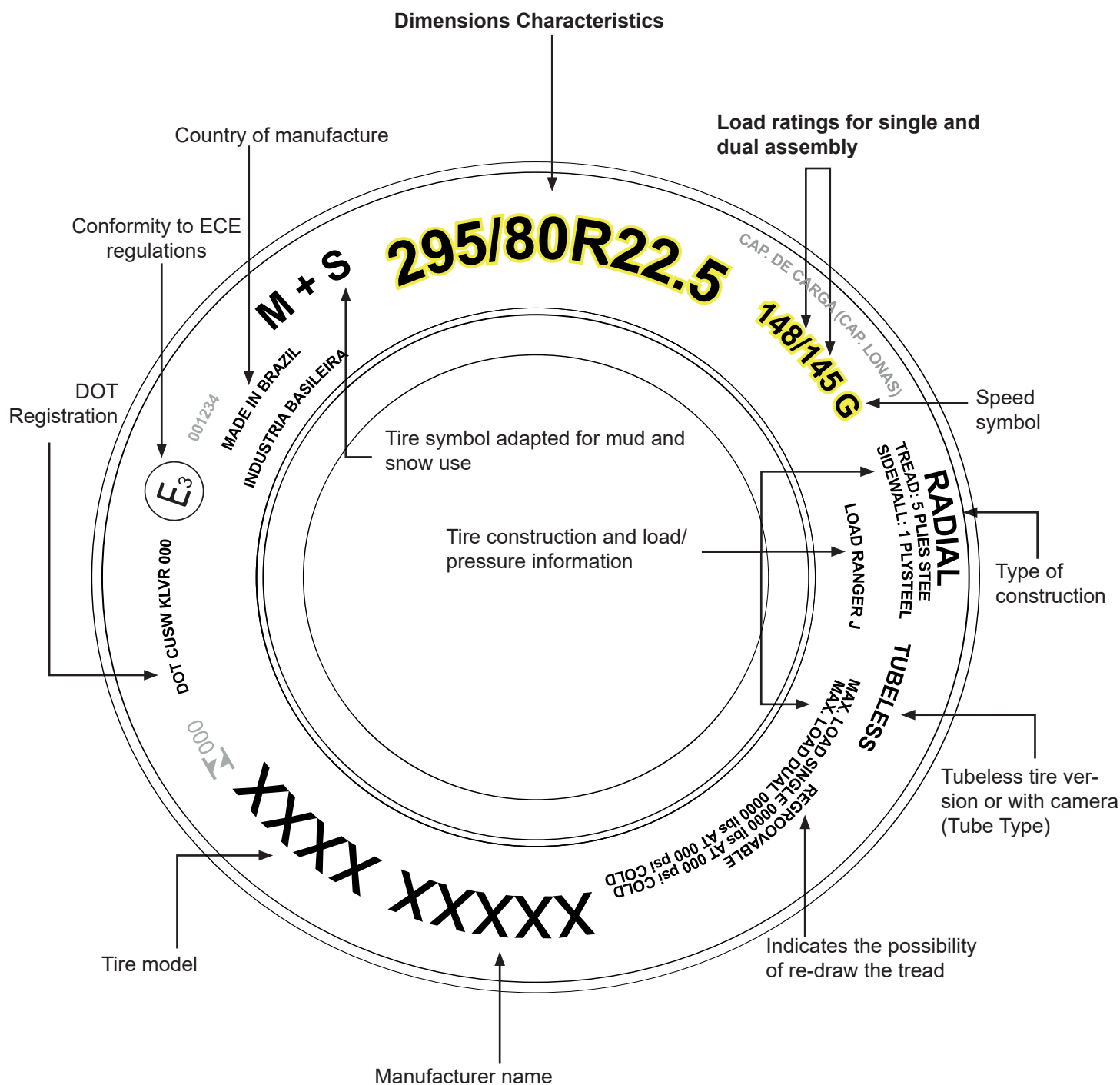
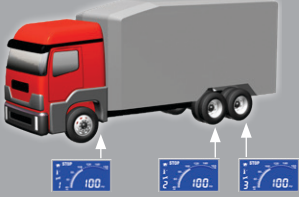


TABLE OF INFLATION PRESSURE VS LOAD X TIRE ACCORDING TO ALAPA

Dimension	Load index			- Inflation pressure - BAR (PSI)												
			4.5 (65)	4.8 (70)	5.2 (75)	5.5 (80)	5.8 (85)	6.2 (90)	6.5 (95)	6.9 (100)	7.3 (105)	7.6 (110)	8 (115)	8.3 (120)	8,5/8,6 (123/125)	9 (130)
			Load per tire in kg													
255/70R22.5	140/137	D	-	1545	1635	1720	1805	1890	1975	2055	2140	2220	2300	-	-	-
		S	-	1680	1775	1870	1965	2055	2145	2235	2325	2415	2500	-	-	-
275/70R22.5	148/145	D	-	1765	1870	1965	2065	2160	2255	2350	2445	2535	2630	2720	2810	2900
		S	-	1920	2030	2135	2240	2345	2450	2555	2655	2755	2855	2955	3055	3150
285/75R24.5	144/141	D	1690	1795	1895	1995	2095	2195	2290	2385	2480	2575	-	-	-	-
		S	1840	1950	2060	2170	2280	2385	2490	2595	2700	2800	-	-	-	-
285/75R24.5	147/144	D	1715	1820	1920	2025	2125	2225	2325	2420	2515	2610	2705	2800	-	-
		S	1885	2000	2110	2225	2335	2445	2550	2660	2765	2870	2970	3075	-	-
295/75R22.5	146/143	D	1750	1860	1950	2060	2130	2220	2300	2390	2470	2575	2630	2725	-	-
		S	1935	2040	2140	2240	2340	2440	2500	2620	2710	2800	2890	3000	-	-
305/75R24.5	154/149	D	1925	2045	2160	2275	2385	2500	2610	2720	2825	2935	3040	3145	3250	-
		S	2220	2360	2490	2625	2755	2885	3010	3135	3260	3385	3510	3630	3750	-
275/80R22.5	149/146	D	-	-	1995	2100	2205	2305	2410	2510	2610	2710	2805	2905	3000	-
		S	-	-	2160	2275	2385	2500	2610	2720	2825	2935	3040	3145	3250	-
295/80R22.5	152/148	D	-	-	2095	2205	2315	2420	2530	2635	2740	2845	2945	3050	3150	-
		S	-	-	2360	2485	2610	2730	2850	2970	3090	3205	3320	3435	3550	-
295/80R22.5	154/149	D	-	-	2150	2260	2370	2480	2595	2705	2815	2925	3030	3140	3250	-
		S	-	-	2485	2615	2745	2870	3000	3125	3250	3375	3500	3625	3750	-
315/80R22.5	154/150	D	-	-	2300	2420	2540	2660	2780	2895	3010	3125	3240	3350	-	-
		S	-	-	2575	2710	2845	2980	3110	3240	3370	3500	3625	3750	-	-
315/80R22.5	156/150	D	-	-	2225	2345	2460	2575	2690	2800	2915	3025	3135	3240	3350	-
		S	-	-	2660	2800	2940	3075	3210	3345	3480	3610	3740	3870	4000	-

ADICIONAL INFORMATION

Dimension	Rim width (inches)	Dimensions (mm)				Dual wheel spacing (mm)	Maximum Simple Ro- lling Load (kg)	Maximum Dual Ro- lling Load (kg)	Pressure (BAR)
		New		Service					
		Section width (mm)	Diameter (mm)	Section width (mm)	Diameter (mm)				
“TUBELESS” RADIAL TIRES FOR 80 SERIES TRUCKS									
275/80R22.5	8.25	276	1012	290	1030	311	6300	11600	8.3
275/80R22.5							6500	12000	8,5/8,6
295/80R22.5	9.00	298	1044	313	1062	335	6700	12300	8
295/80R22.5							7100	12600	8,5/8,6
295/80R22.5							7500	13000	8,5/8,6
295/80R24.5			1094	1112	6700		12600	7.6	
315/80R22.5					7500		13400	8.3	
315/80R22.5		312	1076	318	1096	351	8000	13400	8,5/8,6
“TUBELESS” RADIAL TIRES FOR 75 SERIES TRUCKS									
285/75R24.5	8.25	283	1050	297	1067	318	5150	9440	6.5
							5600	10300	7.6
							6150	11200	8.3
295/75R22.5	9.00	298	1014	313	1032	335	6000	10900	8.3
6500							12000	8,5/8,6	
305/75R24.5		305	1080	320	1098	343	7100	12600	8
							7500	13000	8,5/8,6
“TUBELESS” RADIAL TIRES FOR 70 SERIES TRUCKS									
255/70R22.5	7.50	255	930	268	944	287	5000	9200	8
265/70R19.5		262	867	275	881	295	5000	9440	7.6
275/70R22.5	8.25	276	958	290	974	311	6300	11600	9
275/70R22.5		276	958	290	974		7100	12600	9
285/70R19.5		283	895	297	911		5800	10900	8,5/8,6
305/70R22.5	9.00	305	1000	320	1018	343	7100	12600	9
315/70R22.5		312	1014	318	1032	351	7500	13400	9
“TUBELESS” RADIAL TIRES FOR 60 SERIES TRUCKS									
285/60R22.5	9.00	285	914	299	928	321	6300	11600	9
295/60R22.5		292	926	307	940	329	6500	12000	9
315/60R22.5	9.75	313	950	319	966	352	7100	12600	9

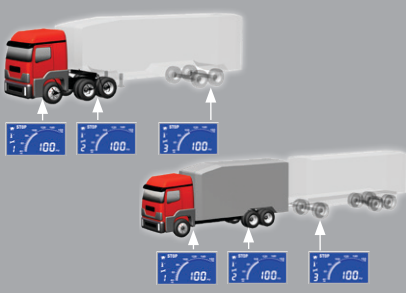
 TRUCK UNIT		SUITABLE UNITS						
		Compressor Pres- sure (BAR)		Flow (ln/min)		Maximum number of tires to deflate and inflate	Maximum Pressure Suggested (Loaded)	Observation
		Start	Idle	cut	At 1200 rpm			
BRAND	MODEL							
IVECO	CURSOR 330	9.1 BAR	10.9 BAR	132 (ln/min)	325 (ln/min)	10	8.3 BAR	A
IVECO	440 HI-WAY	7.7 BAR	10.4 BAR	300 (ln/min)	590 (ln/min)	10	7.6 BAR	
IVECO	260E28 TECTOR	9.6 BAR	10.5 BAR	172 (ln/min)	315 (ln/min)	10	8 BAR	
RENAULT	300 DXI MIDLUM	11.4 BAR	12.4 BAR	460 (ln/min)	580 (ln/min)	10	8.3 BAR	
MERCEDES BENZ	ACTROS 1846	9.7 BAR	12.4 BAR	164 (ln/min)	460 (ln/min)	10	8.3 BAR	A
MERCEDES BENZ	NEW ACTROS 2042	9.9 BAR	12.4 BAR	156 (ln/min)	390 (ln/min)	10	8.3 BAR	A
MERCEDES BENZ	ATEGO 2730	9.4 BAR	10 BAR	153 (ln/min)	330 (ln/min)	10	7.6 BAR	A
MERCEDES BENZ	AXOR 1933	8.8 BAR	10 BAR	150 (ln/min)	340 (ln/min)	10	8.3 BAR	A
MERCEDES BENZ	AXOR 2041	9.8 BAR	10.8 BAR	270 (ln/min)	700 (ln/min)	10	7.6 BAR	
MERCEDES BENZ	1635 y 1735 ATRON	8.1 BAR	9.6 BAR	165 (ln/min)	360 (ln/min)	10	8 BAR	A
SCANIA	SERIE 4 P310 (since 2008)	8.9 BAR	10 BAR	319 (ln/min)	620 (ln/min)	10	8 BAR	
SCANIA	SERIE 4 G310 (since 2008)	9 BAR	10 BAR	310 (ln/min)	630 (ln/min)	10	7.3 BAR	
SCANIA	SERIE 4 R360 (until 2007)	8 BAR	9.1 BAR	127 (ln/min)	445 (ln/min)	10	8.3 BAR	A
SCANIA	NTG G360	9.9 BAR	11.4 BAR	245 (ln/min)	635 (ln/min)	10	8.3 BAR	
VOLVO	FH420	11 BAR	12.5 BAR	340 (ln/min)	640 (ln/min)	10	9 BAR	
VOLVO	FH380	11 BAR	12.4 BAR	350 (ln/min)	560 (ln/min)	10	9 BAR	
PUNITS CONDITIONED BY THE NUMBER OF TIRES AND CALIBRATION RANGE								
FORD	CARGO 1722	7.9 BAR	10.3 BAR	132 (ln/min)	205 (ln/min)	4	8 BAR	B
VOLKSWAGEN	CONSTELLATION 17-280	8.3 BAR	10 BAR	113 (ln/min)	200 (ln/min)	4	8.3 BAR	A
VOLKSWAGEN	CONSTELLATION 19-320	8 BAR	9.3 BAR	150 (ln/min)	260 (ln/min)	4	8 BAR	B
VOLVO	VM330	8 BAR	9 BAR	152 (ln/min)	290 (ln/min)	4	8 BAR	B

References:

A) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 8.3 BAR.

B) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 8 BAR.


C) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 7.6 BAR.

 TRACTOR TRUCK UNIT		SUITABLE UNITS						
		Compressor Pressure (BAR)		Flow (ln/min)		Maximum number of tires to deflate and inflate	Maximum Pressure Suggested (Loaded)	Observation
		Start	Cut	Idle	At 1200 rpm			
BRAND	MODEL							
IVECO	CURSOR 330	9.1 BAR	10.9 BAR	132 (ln/min)	325 (ln/min)	26	8.3 BAR	A
IVECO	440 HI-WAY	7.7 BAR	10.4 BAR	300 (ln/min)	590 (ln/min)	26	7.6 BAR	
IVECO	260E28 TECTOR	9.6 BAR	10.5 BAR	172 (ln/min)	315 (ln/min)	26	8 BAR	
RENAULT	300 DXI MIDLUM	11.4 BAR	12.4 BAR	460 (ln/min)	580 (ln/min)	26	8.3 BAR	
MERCEDES BENZ	ACTROS 1846	9.7 BAR	12.4 BAR	164 (ln/min)	460 (ln/min)	26	7.6 BAR	C
MERCEDES BENZ	NEW ACTROS 2042	9.9 BAR	12.4 BAR	156 (ln/min)	390 (ln/min)	26	8.3 BAR	C
MERCEDES BENZ	Atego 2730	9.4 BAR	10 BAR	153 (ln/min)	330 (ln/min)	26	7.6 BAR	C
MERCEDES BENZ	AXOR 1933	8.8 BAR	10 BAR	150 (ln/min)	340 (ln/min)	26	8.3 BAR	C
MERCEDES BENZ	AXOR 2041	9.8 BAR	10.8 BAR	270 (ln/min)	700 (ln/min)	26	7.6 BAR	
MERCEDES BENZ	1635 y 1735 ATRON	8.1 BAR	9.6 BAR	165 (ln/min)	360 (ln/min)	26	8 BAR	B
SCANIA	SERIE 4 P310 (since 2008)	8.9 BAR	10 BAR	319 (ln/min)	620 (ln/min)	26	8 BAR	
SCANIA	SERIE 4 G310 (since 2008)	9 BAR	10 BAR	310 (ln/min)	630 (ln/min)	26	7.3 BAR	
SCANIA	SERIE 4 R360 (until 2007)	8 BAR	9.1 BAR	127 (ln/min)	445 (ln/min)	22	8.3 BAR	B
SCANIA	NTG G360	9.9 BAR	11.4 BAR	245 (ln/min)	635 (ln/min)	26	8.3 BAR	
VOLVO	FH420	11 BAR	12.5 BAR	340 (ln/min)	640 (ln/min)	26	9 BAR	
VOLVO	FH380	11 BAR	12.4 BAR	350 (ln/min)	560 (ln/min)	26	9 BAR	
UNITS CONDITIONED BY THE NUMBER OF TIRES AND CALIBRATION RANGE								
FORD	CARGO 1722	7.9 BAR	10.3 BAR	132 (ln/min)	205 (ln/min)	4	8 BAR	B
VOLKSWAGEN	CONSTELLATION 17-280	8.3 BAR	10 BAR	113 (ln/min)	200 (ln/min)	4	8.3 BAR	A
VOLKSWAGEN	19-320	8 BAR	9.3 BAR	150 (ln/min)	260 (ln/min)	4	8 BAR	B
VOLVO	VM330	8 BAR	9 BAR	152 (ln/min)	290 (ln/min)	4	8 BAR	B

References:

- A) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 8.3 BAR.
- B) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 8 BAR.
- C) Due to the low flow of the compressor, it can take more than 30 minutes to inflate from 5.5 to 7.6 BAR.



 SPRAYER		SUITABLE UNITS						
BRAND	MODEL	Start	Cut	Idle	At 1200 rpm	Maximum number of tires to deflate and inflate	Maximum Pressure Suggested (Loaded)	
All brands and models (examples)								
OMBU	PAO (3000)	7.2 BAR	8.1 BAR	160 (ln/min)	233 (ln/min)	4	-----	
JOHN DEERE	M4030	6.8 BAR	8.6 BAR	138 (ln/min)	160 (ln/min)	4	-----	

10.4: CHECK LIST CONTROL

CRITICAL POINTS	OK ✓	NO ✗	REP ■	OBSERVATIONS
1- Front axle				
- Check body coupling settings				
- Check the adjustment and state of the reinforced arms				
- Check the setting of the inflation valves				
- Check rotor condition				
- Check the air passage to each tire				
- Check leakages				
2- Drive shaft				
- Check body coupling settings				
- Check the adjustment and state of the reinforced arms				
- Check the setting of the inflation valves				
- Check rotor condition				
- Check the air passage to each tire				
- Check leakages				
3- Auxiliary / trailer axle or semi-trailer				
- Check body coupling settings				
- Check the adjustment and state of the reinforced arms				
- Check the setting of the inflation valves				
- Check rotor condition				
- Check the air passage to each tire				
- Check leakages				
4- Air supply system				
- Air compressor cut-off pressure				
- Air compressor hitch pressure				
- Blocking valve functioning				
- Air bleeder functioning				
- Fastening of the air network				
- Air filter				
5- Functioning control				
- Check ignition by opening the ignition key				
- Check leakage alarm 1 (circuit 1, 2 and 3)				
- Check leakage alarm 2 (circuit 1, 2 and 3)				
- Check leakage alarm 3 (circuit 1, 2 and 3)				
- Check the low inlet pressure safety system				
- Check LoP indication				
- Check L.o.P indication				
- Check excessive leakage alarm (E01)				
- Check process from Unloaded to Loaded (inflation)				
- Check process from Loaded to Unloaded (desinflation)				

AUTOMATIC TIRES PRESSURE SYSTEM NM 444 TECHNICAL MANUAL
CODE A01.01886-8
REVISION: 001
VALIDITY: 28.11.2022

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