



**TIRE PRESSURE SYSTEMS**

# **NM253 EXTERNAL SYSTEM FOR TRUCKS AND BUSES USER'S MANUAL**

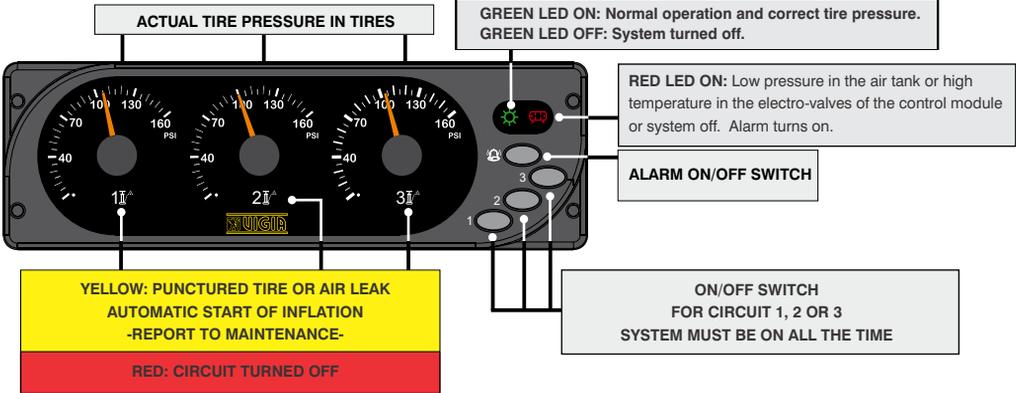


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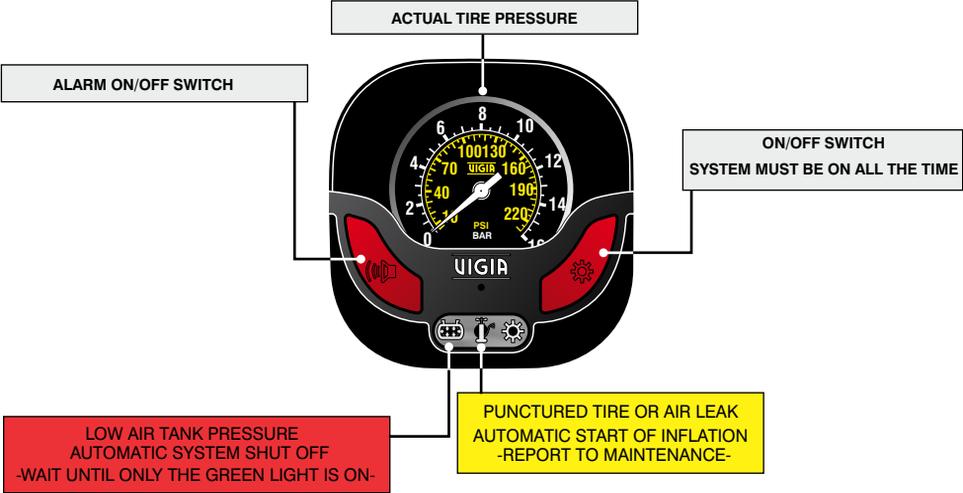
**[www.vigia.ca](http://www.vigia.ca) / 1-888 438-8444**

# OPERATION

## 2 - 3 GAUGE DISPLAY MODULES



## 1 GAUGE DISPLAY MODULE



## **IMPORTANT**

Installation, disassembly, repairs and maintenance of the VIGIA Tire Pressure Systems must be performed only by a certified mechanic with specific knowledge in the installation of VIGIA Systems. Certified mechanic must use proper protective equipment when installing, repairing and maintaining the VIGIA systems.

Improper installation or use of unauthorized parts can cause malfunctions, loss of tire pressure and other consequences which may result in serious injury or death.

Manufacturer or Distributor will not be responsible for injuries resulting from misuse of equipment, use contrary to operating instructions or installation by any person other than an Authorized Installer.

Information contained in this manual is subject to change. Col-Ven S.A. reserves the right, without notice, to make changes in equipment design or components as progress in engineering, manufacturing or technology may warrant.

World-wide Patents

VIGIA is a trademark of Col-Ven S.A.

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## VIGIA AUTOMATIC TIRE PRESSURE SYSTEM

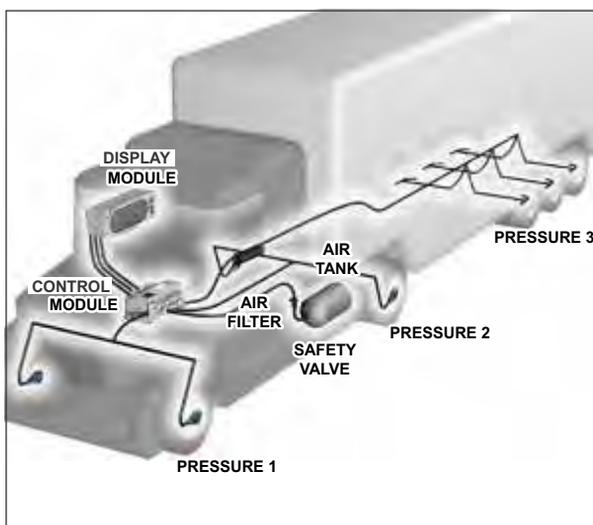
VIGIA constantly checks and maintains tire pressures at a constant, pre-set level while providing instant, ongoing feedback to the driver. VIGIA delivers increased tire mileage, less down time, better fuel economy and increased safety.

### Operation

In the event of a drop in pressure in one or more tires due to punctures or other causes, the system automatically generates audio and visual signals that inform the driver of the problem and its location. At the same time, the system begins pumping air, keeping tire pressures calibrated at the pre-set levels. If the loss of air is

substantial, as in the case of a blow-out, and the equipment is not able to compensate for this loss, a visual signal advises the driver. At the same time, an electronic security valve blocks any air to the tires, thus ensuring the normal operation of the other air-operated systems (i.e. brakes, suspension, etc.).

Model NM 253 can be installed in all vehicles equipped with an air compressor.





# PARTS



DISPLAY MODULES



ROTOR



HOSE AND TIRE VALVES



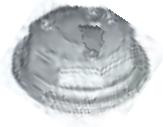
CONTROL MODULE NM 253



STARS



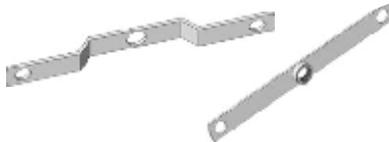
END HOSE CONNECTOR TO ROTOR



ROTOR MOUNTING KITS



DISK  
215 MM.



ROTOR MOUNTING KITS



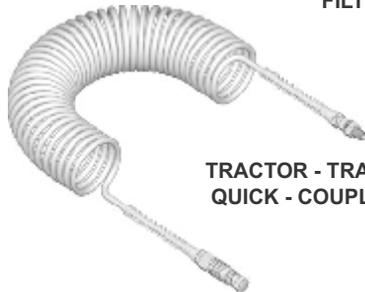
AIR  
FILTER



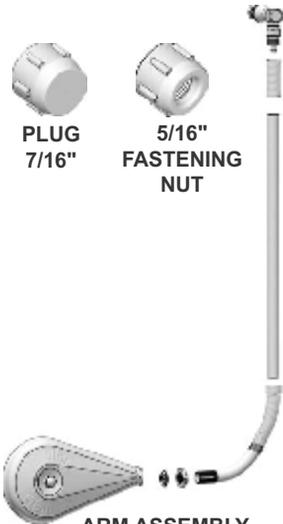
PLUG  
7/16"



5/16"  
FASTENING  
NUT



TRACTOR - TRAILER  
QUICK - COUPLING SET



ARM ASSEMBLY



DOUBLE OUTLET  
BODY COUPLING



STANDARD  
BODY COUPLING



QUICK CONNECT  
BODY COUPLING

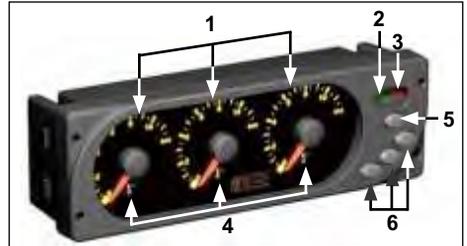
## DISPLAY MODULES

Display modules are available with 1, 2 or 3 gauges.

### 2 and 3 Gauge Version

#### Location of Parts and Components

- 1 - Gauges
- 2 - Green L.E.D.
- 3 - Red L.E.D.
- 4 - Yellow/Red L.E.D.
- 5 - Alarm On/Off Switch
- 6 - Circuit On/Off Switch



**Note:** The printed numbers at the back indicate the different air circuits: 1 for steering axle(s), 2 for drive axle(s) and 3 for auxiliary axle(s) or for trailer axles.

### Operation

#### Green L.E.D. Only

Normal Operation.  
Tires are calibrated.



**Yellow L.E.D. (flashing):** Tire punctured or air leak. The system is recuperating the air loss and driver can continue the trip.

**Yellow L.E.D. (solid):** The system is unable to maintain the set pressure. Stop the vehicle and with the engine running allow the system to recuperate pressure. Check the problem.

**Red L.E.D. :** Circuit turned OFF.





To quickly trace an air leak ( yellow LED on), turn the circuit off and:

- a) If the gauge reading falls quickly, the leak is located in the system network between the VIGIA tire valve and the display module.
- b) If the gauge reading falls very slowly, the leak is located in the tire (puncture) or a VIGIA tire valve is defective or loosely attached to the tire stem.

**IMPORTANT:** Tire punctures and air leaks must be repaired as soon as possible.

**Red and Yellow L.E.D.s (alternating):**

Excessive air loss and low air tank pressure. Automatic system disconnection (system will reconnect automatically when air tank reaches its normal pressure). Driver to safely stop the vehicle and check the problem.



**Green and Red L.E.D.s (solid):**

Low air tank pressure or high temperature in the electro-valves of the control module. System will reconnect automatically when air tank reaches its normal pressure or electro-valves' temperature drops.



**Alarm Off**

Press  to turn alarm Off or On.

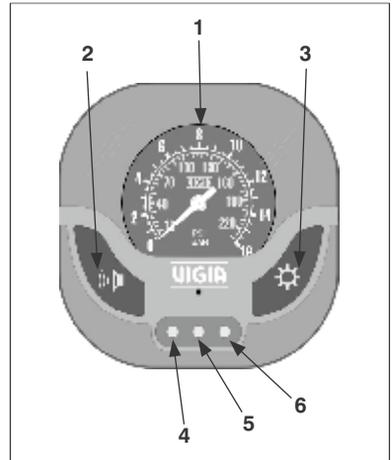


## 1 Gauge Version

### Location of Parts and Components

- 1 - Gauge
- 2 - Alarm On/Off Switch
- 3 - System On/Off Switch
- 4 - Red L.E.D.
- 5 - Yellow L.E.D.
- 6 - Green L.E.D.

**Note:** At the back of the Display Module are the pneumatic and electrical connections to the Control Module.



## Operation

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Normal Operation.  
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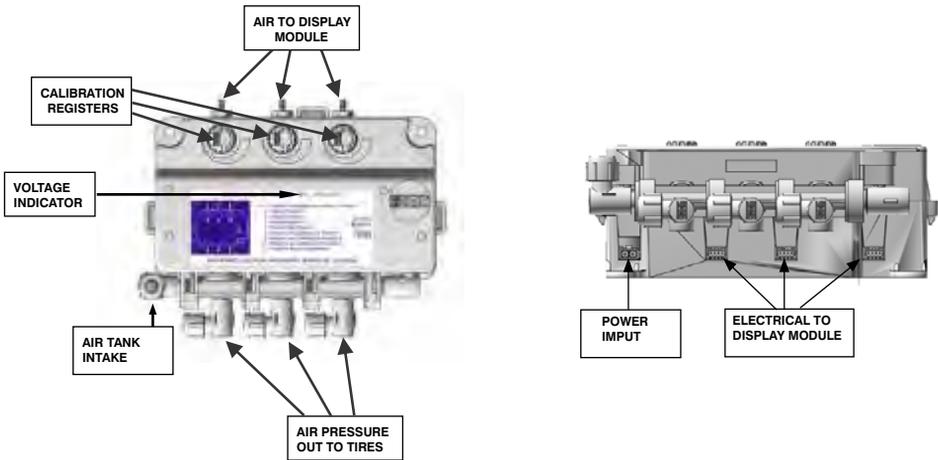
**Alarm Off**

Press  to turn alarm Off or On.

## CONTROL MODULE

The control module permanently controls and adjusts tire pressures in the tires and sends the information to the display module.

VIGIA offers control modules for 1, 2 or 3 independent pressures.

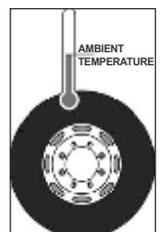


**Important:** DO NOT change calibration. If you decrease pressure settings, tires will not be de-inflated. Only trained personnel should change calibration. NEVER adjust or tamper with control module registers.

## Tire Pressure and Temperature

### Calibrate with “COOL” tires

Tires should be calibrated when they are cool (at ambient temperature) according to the “inflation table” supplied by the tire manufacturer.





## Never bleed tires to reduce increased air pressure due to rolling resistance

It is normal and expected that tires increase up to 12% psi over the set pressure when the tires warm up after rolling. This situation is normal and will be shown by the VIGIA Automatic Tire Pressure System.

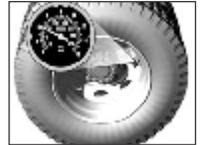
**Do not deflate the tires to compensate for this increase.**

***Note:** Air pressures may not be the same in all the tires of a particular air circuit or axle. The gauge monitoring that circuit/axle will indicate the air pressure of the least inflated tire in that circuit/axle.*

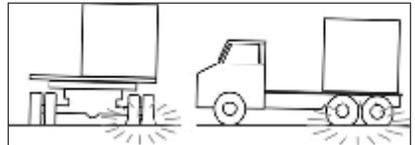
If during operation tire pressures increase more than 18% over the set pressure, the cause should be inspected. Possible causes:

A- *Tire over-inflated at the time of installation.*

***Note:** The VIGIA system will not deflate tires.*



B- *Bad load distribution.*



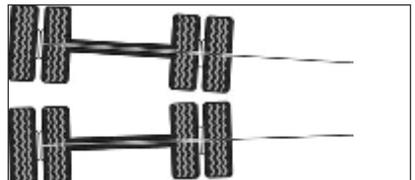
C- *Wrong selection of tire size.*



D- *Different or mix-matched tires on the Same axle.*



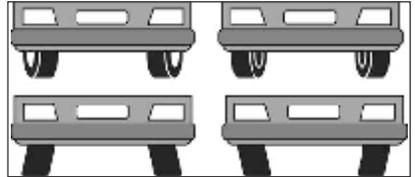
E- *Axles are out of alignment.*



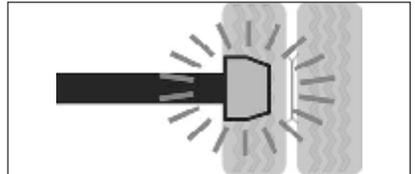
*F- Different tire sizes in duals.*



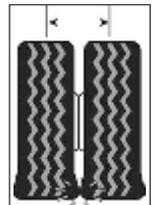
*G- Problems in the vehicle suspension, steering or alignment.*



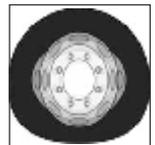
*H- Problems in the brakes.*



*I- Incorrect separation among dual tires.*



*J- Bad or oval wheels.*

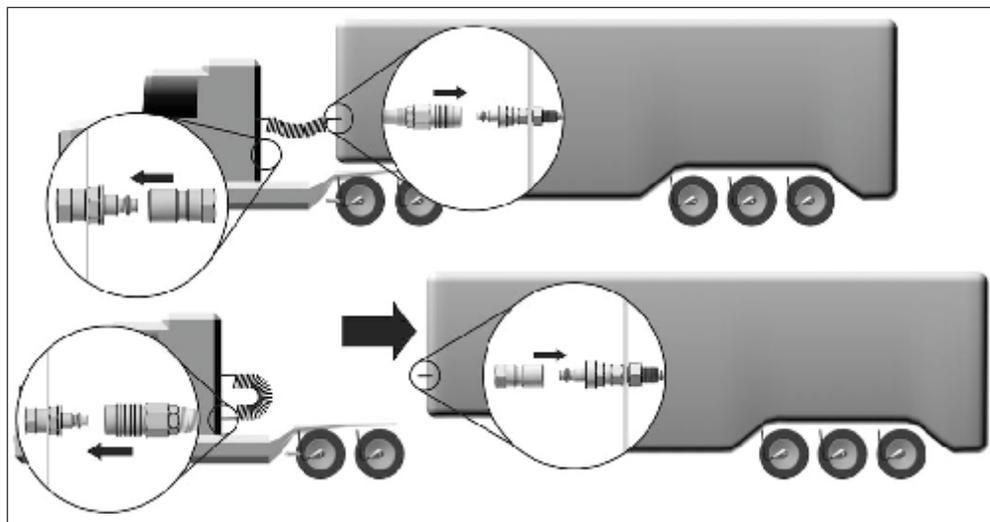


VIGIA allows you to monitor over-inflation. While the system does not contribute to over-inflation, it will alert the driver of problems that would otherwise go unnoticed.

## TRACTOR - TRAILER CONNECTION

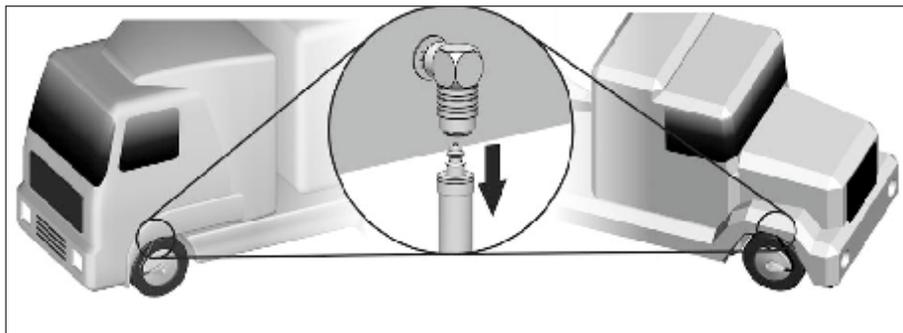
Connect the valve located at the end of the spiral hose to the fixed valve located in the trailer.

To unhook, disconnect the spiral hose and protect both valve ends using the cap and support.



## Quick Connect Body Coupling

Disconnect Body Couplings before tilting cab or opening hood.



## SYSTEM MAINTENANCE

### Air Tanks and Air Filter

- A- The air filter will only retain solid impurities. To avoid water or other liquids in the system, drain air tanks periodically.
- B- The air filter must be kept clean for proper system operation. Clean the air filter at least once a year.
- C- When disassembling/assembling the air filter for cleaning, pay attention to the order of the components.
- D- Lubricate the O-ring to avoid air leaks.
- E- Maximum air pressure: 200 PSI (14 BAR).



### VIGIA Tire Valves

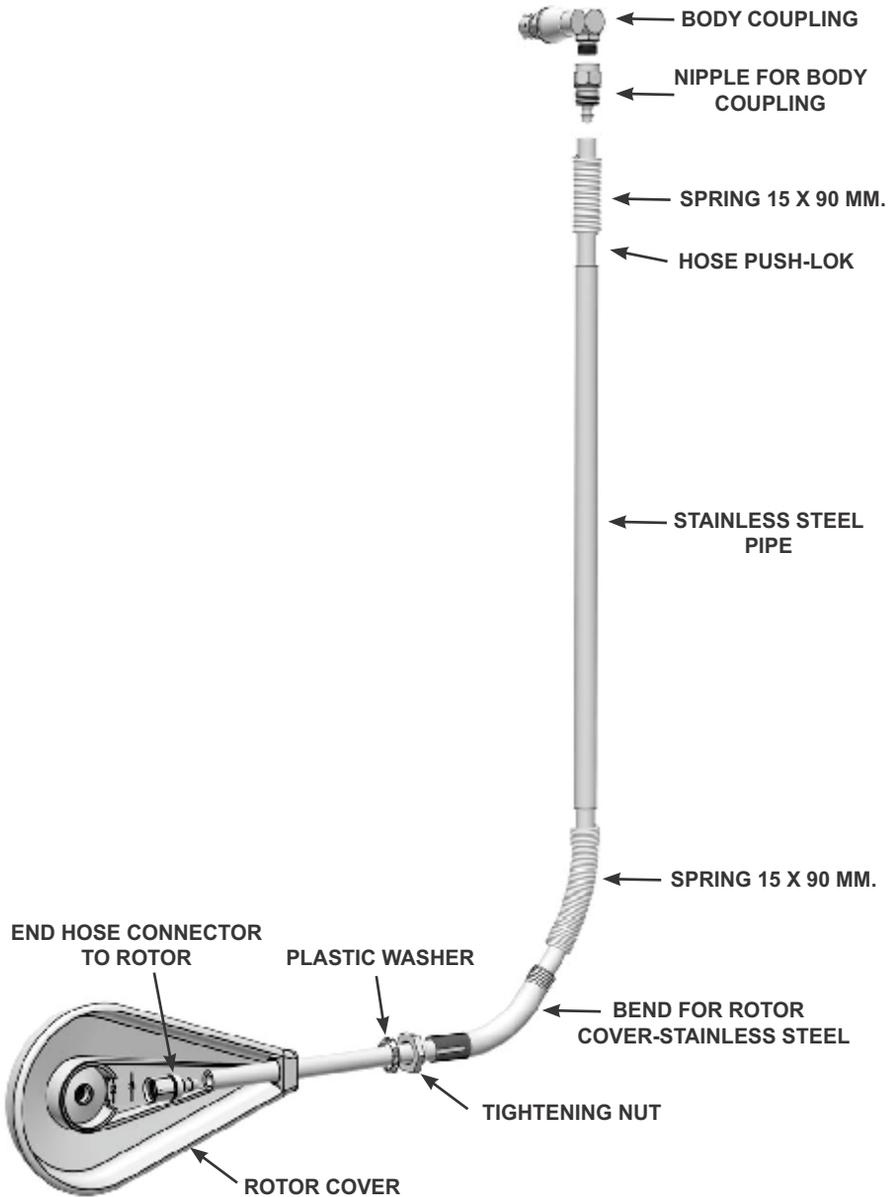
VIGIA's tire valves incorporate check valves that replace the original tire valve cores. If air leaks from the tire upon disconnecting a VIGIA tire valve from the rotor, proceed as follows:

- A- Remove the hose and tire valve.
- B- Spray the tire valve end with soapy water and make sure that the valve's O-ring is intact.
- C- Reinstall the hose and tire valve, tightening lightly with a wrench. Verify that the hose and tire valve does not rub against wheel rim, rotor support or hub.
- D- If air leak persists, replace hose and tire valve.



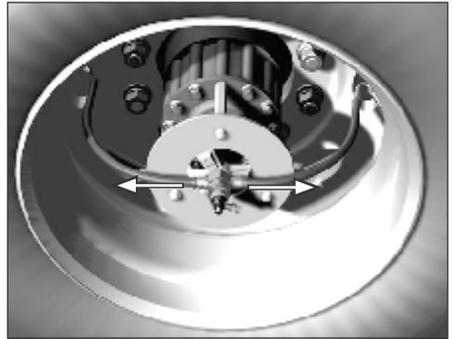
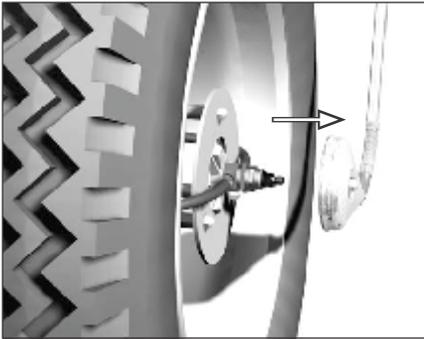


## Connection Body Coupling to Rotor



## Tire Changes

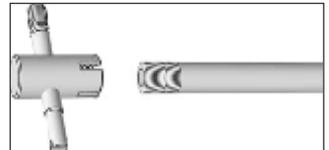
A- Remove the rotor cover. Disconnect the hose/s at the rotor.



B- Remove the tire taking care of not damaging the rotor.

C- Remove the VIGIA hoses and tire valves and install them in the new tire according to the following instructions:

- *Thoroughly clean the external thread of the original tire stem with a brush.*



- *Remove the valve core.*

- *Screw the VIGIA tire valve, lightly tightening it with a wrench. Verify that the VIGIA hose and tire valve does not rub against the wheel rim, hub or rotor support. Modify the valve position if necessary.*

D- Ensure that the tire pressure is lower than the desired tire pressure. The system will calibrate it to the pre-set value.

E- Install the new tire.

F- Reconnect the end hose connectors to the rotor.

G- Reinstall the rotor cover and tighten its nut.





## System Disconnection

### Partial

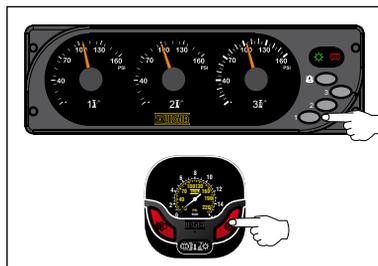
In case of air loss in one circuit, where no repair is possible at the moment, the damaged line can be annulated with the plug provided.



### Complete Circuit

If the air loss is in a place that does not allow for the partial disconnection explained before, disconnect the complete circuit pressing the corresponding key.

**Contact your authorized Vigia service.**



## MAINTENANCE SCHEDULE

### At P.M. Intervals

1. Check for air leaks in the system.
2. Check condition and fastening of parts on wheel assembly.
3. Check operation of system.

### Annually or at each 300,000 Km.

1. Replace rotors.
2. Clean Vigia air filter.

## IMPORTANCE OF TIRE PRESSURE

Proper inflation is the most important requirement for maximum tire safety and tire mileage

### Low Tire Pressure:

Under inflation increases flexing of the casing which generates excessive heat causing fatigue, premature shoulder wear, cap separation and ultimately tire failure .



### Excessive Tire Pressure:

Over inflation weakens the tire by preventing the tire to absorb impacts, generating irregular wear, reducing resistance to punctures and ultimately producing tire failure. Over inflation reduces the area of the tire in contact with the ground reducing traction and making the tire skid .



**Important:** According to tire manufacturers' specifications, tire pressure must be calibrated when tires are COLD (allow the tires to cool for 3-4 hours after use). Tire pressure may increase up to 12 % over the "cold" pressure due to rolling resistance when in use. VIGIA will show this pressure increase in the display module's gauges. DO NOT BLEED THE TIRES.



## **RECOMMENDATIONS FROM VIGIA**

- A- Each time a tire is replaced, make sure that its pressure is lower than the system's set pressure. **The system only supplies air to the tires; VIGIA will not reduce tire pressure.**
- B- Check that rotors are centered in respect to the wheel every time a wheel or hub is dismantled.
- C- Verify that hose and tire valves do not rub against wheel rims, rotor supports or hub. Tighten valves securely with a wrench.
- D- Replace or repair damaged tires as soon as possible.
- E- Do not tamper with the calibration registers located in the control module.

# LIMITED WARRANTY

This limited warranty is provided to the original buyer only and covers the VIGIA AUTOMATIC TIRE PRESSURE SYSTEM (the "Product") manufactured by Col-Ven S.A. (the "Manufacturer") and distributed by RCR Systems Limited (the "Distributor").

The warranty period is one year from date of original purchase by the buyer. During this period, if the product is found to be defective in mechanical or electrical materials or workmanship during normal use, it will be repaired or replaced at no charge to the buyer. The buyer will be required to show date and proof of purchase and to return the Product pre-paid to the Distributor.

THIS LIMITED WARRANTY DOES NOT COVER, AND MANUFACTURER OR DISTRIBUTOR WILL NOT BE RESPONSIBLE FOR, THE FOLLOWING:

- Normal wear of parts;
- Failures or defects due to negligent use, misuse, neglect, abuse, use on improper voltage or current, use contrary to operating instructions, accidents, alterations, disassembly, installation, repair or alteration by any person other than an Authorized Dealer, fire, floods or acts of God.
- Products or accessory equipment not manufactured by the Manufacturer.
- Performance of Product when used in combination with other products or equipment not manufactured by the Manufacturer.
- Payments for labour or service to unauthorized representatives or service agents.

Manufacturer or Distributor will not be responsible for loss of time, inconvenience, loss of use of the Product, injury to buyer or other persons or damage to vehicle, tires or property caused by the Product or by its failure to work or for any other incidental, punitive or consequential damages.

The Manufacturer reserves the right to make the final decision on any warranty claim that may be questionable.

This warranty is not transferable.

EXCEPT AS PROVIDED HEREIN, THIS WARRANTY EXPRESSLY EXCLUDES:

- (i) all warranties and conditions, whether express, implied or statutory, including but not limited to warranties and conditions of merchantability for a particular purpose; and
- (ii) any agreements, representations, affirmations, warranties or conditions, whether oral or written, made by any agent, employee or representative of seller.

Manufacturer and Distributor make no claims, guarantees or assurances that blowouts or other tire failures will not occur and are not responsible for damages or injuries resulting from such occurrences.

This warranty sets forth the entire responsibility of Manufacturer and Distributor with respect to the Product. The buyer's exclusive remedy is repair or replacement as stated herein. In no event shall Manufacturer or Distributor's liability exceed the cost of correcting defects as provided herein and any such liabilities will terminate upon expiration of the one year warranty period.

# USER'S MANUAL VIGIA NM253

1-2013



P.O.Box 1352 – 1500 Avenue Road  
Toronto, Ontario M5M 0A1  
CANADA

**COLVEN**

Ruta 11 Km.814 - Guadalupe Norte  
Prov. de Santa Fe (S3574XAB)  
ARGENTINA

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