

V5 Scale

Installation Manual



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Introduction

Thank you for purchasing a high-precision electronic scale from Vulcan On-Board Scales. Based on more than 40 years of expertise, research and development, your weighing system will provide you with years of service and precision, under the most difficult road or construction conditions.

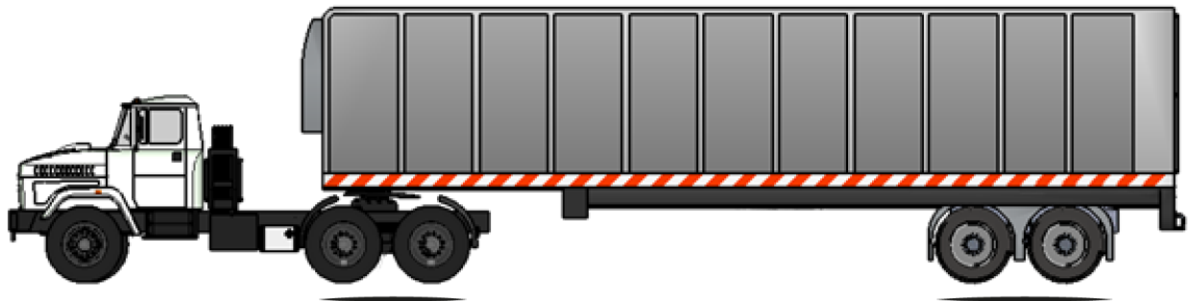
The durability and performance of your Vulcan system is closely linked to a quality installation and precise calibration. To do this, your authorized reseller will be able to adjust your V5 scale according to your needs. If you do the installation yourself, no problem. Consult this installation manual to guide you step by step. Then flip through your user manual as it contains all the information you need to set up, calibrate and use your scale.

For technical assistance, please contact the Service department at 1-800-237-0022.

Once again, congratulations and happy driving with your Vulcan system!

Main configurations

Semi-trailer

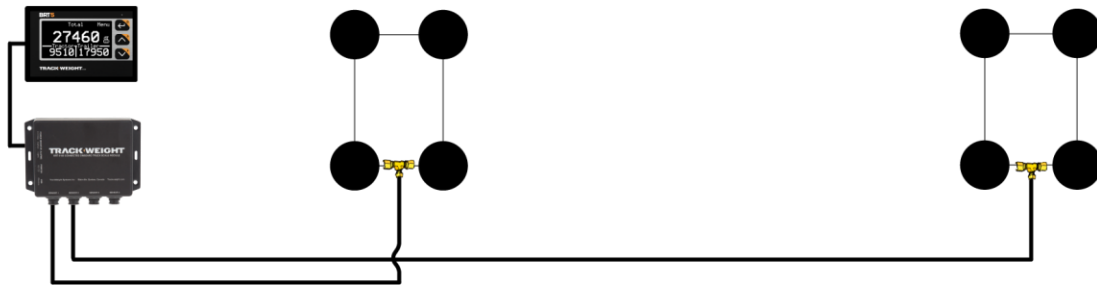


Type of suspension:

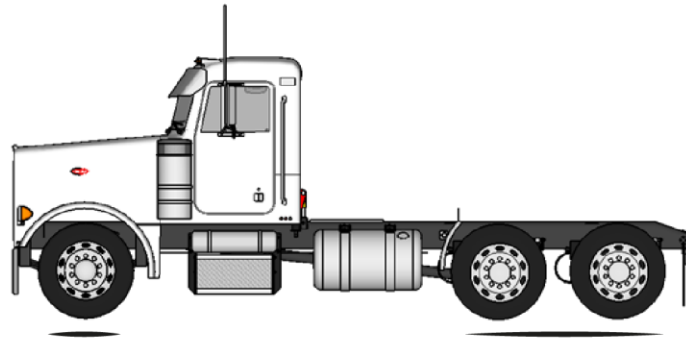
Air

Air

One self-leveling valve on tractor, and one self-leveling valve on trailer



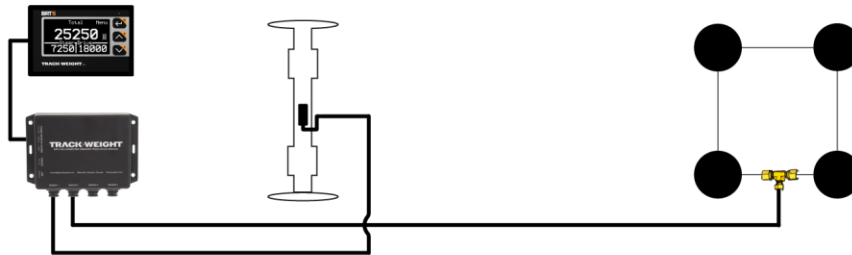
6 – 10-wheel truck



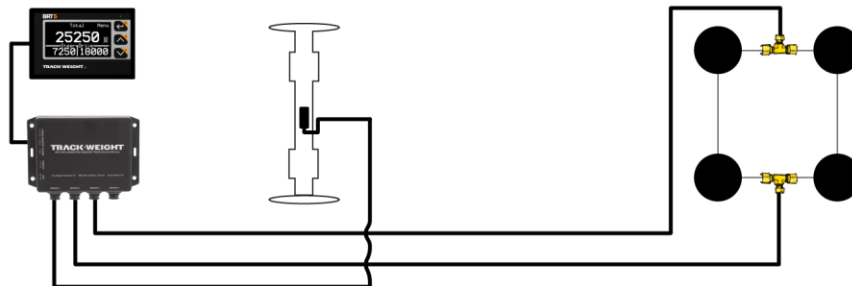
Type of suspension: Mechanical

Air

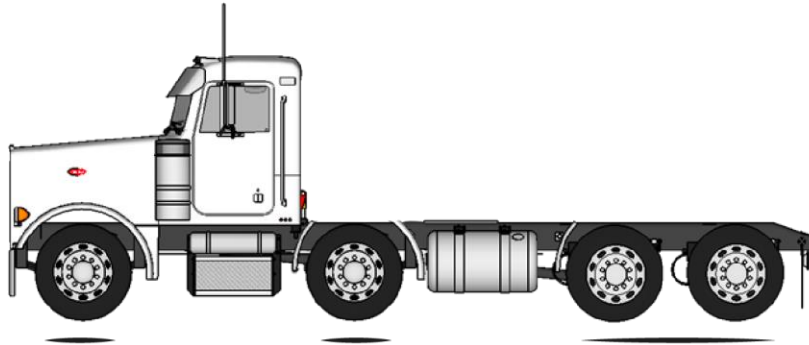
One mechanical sensor + one self-leveling valve



One mechanical sensor + two self-leveling valves

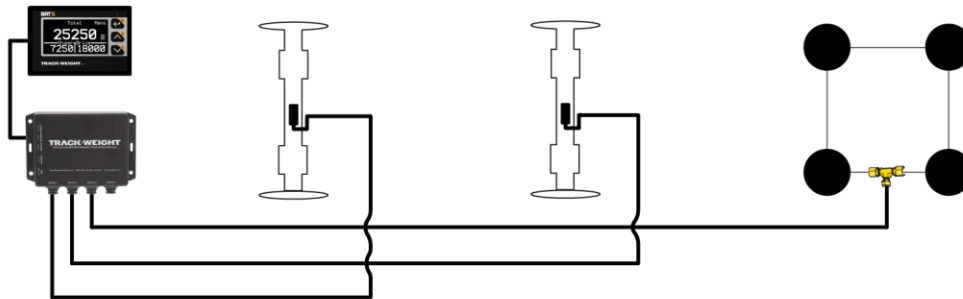


12-wheel truck

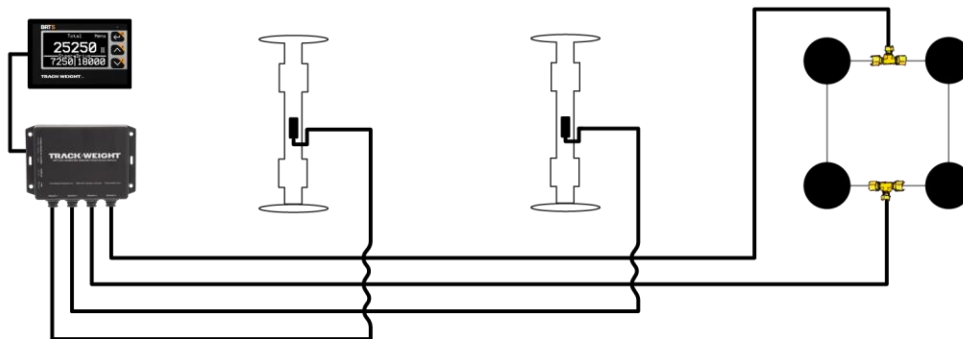


Type of suspension: Mechanical Mechanical* Air

Two mechanical sensors + one self-leveling valve



Two mechanical sensors + two self-leveling valves



* If it is a lift axle, it is possible to replace the mechanical sensor with an air sensor depending on the type of suspension.

Installation of the monitor and communication box



Components

No.	Quantity	Part Number	Component
1	1	V5A-101	Vulcan V5 Meter
2	1	BT01	Communication Box
3	1	53-30075-004	Power cable
4	1	53-30075-003	V5 Monitor cable

Installation

1. Identify a location with enough space to accommodate the V5 Meter.
Note: It is possible to install the monitor in the dashboard or on the top of the dashboard with the stand.



2. The communication box is located inside the dashboard. You must select a location to protect it with enough space to allow the installation of sensors and cabling.



CAUTION: Avoid installing the communication box near an extreme heat source. Ideally, it should also be installed far from the radio antenna.

3. Secure the communication box inside the dashboard so that it does not move.

The communication box operates on a current of 12-24 VDC. Connect the power cable (53-30075-004) to the fuse board. The red wire must be connected to a stable source with a free fuse (minimum 5A). The black wire must be added to the board's common neutral (or other neutral) for the scale monitor only. The other end of the cable should lead to the communication box in the "Power 12-24 VDC" indicated connector.



Connect the cable (53-30075-003) to the monitor and to the "Monitor" connector of the communication box.



Installation of air sensor on trailer or 6 - 10 - 12-wheel trucks

Components

If one height valve:

Quantity	Part Number	Component
1	58-10605-001	Air Sensor
1	BRT 5053 (or BRT 5055)	¼" T-tube fitting (or ⅜" x ⅜" x ¼" tube)
	BRT 5220	¼" tube

If two height valves:

Quantity	Part Number	Component
2	58-10605-001	Air Sensor
2	BRT 5053 (or BRT 5055)	¼" T-tube fitting (or ⅜" x ⅜" x ¼" tube)
	BRT 5220	¼" tube

*Recommendation: Hadley series 500 high speed valve.

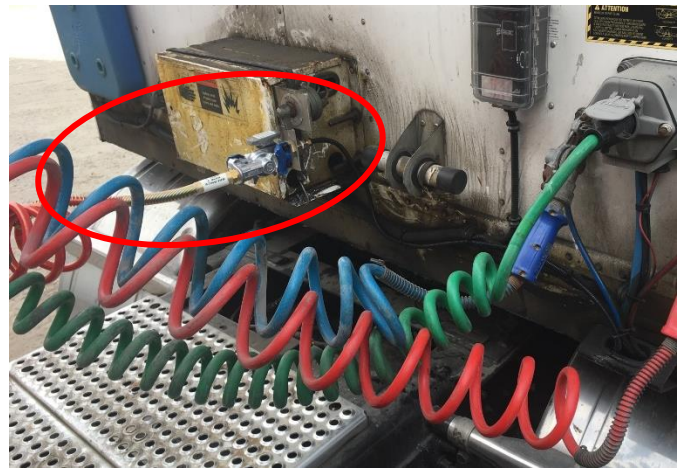
REQUIRED TOOLS

- Wrenches
 - o 9/16
 - o 1/2
 - o 5/8
- Pliers
- Pipe cutter
- Teflon
- Self-locking tie wraps

Additional components (tractor-trailer)

In addition to the components listed above, you should have at least one of these components for installing an air sensor on tractor-trailer configurations.

Quantity	Part Number	Component
	BRT 580	Twisted air hose with service hand
	BRT 582	⅜" air hose with service hand
	BRT 584	Service hand with valve
	BRT 586	Twisted air hose with ½" quick plug
	BRT 587	Straight air hose with ½" quick plug
	BRT 589	½" quick plug trailer side

BRT 580**BRT 584**

Installation on tractor-trailer configuration

Tractor end

Four air hose options are available: BRT 580 (twisted), BRT 582 (straight), BRT 586 (twisted, quick plug) or BRT 587 (straight, quick plug).

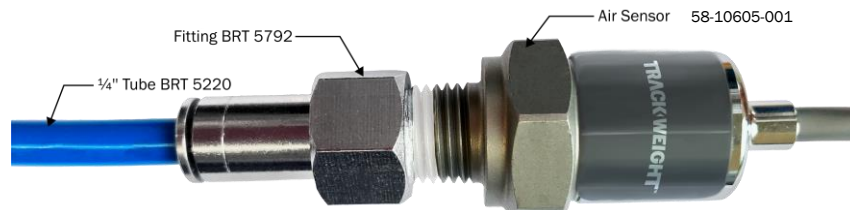
1. Identify the number of height valves on the tractor.
2. For each system controlled by a valve, an air line must lead to the V5 communication box.
3. Cut the air line as close as possible to the balloon to insert a *BRT 5053* or *BRT 5055* "T" fitting¹ (depends on the size of the air line tube).

¹ For a group of 3 axles, insert the "T" on the middle one. For a group of 2 axles, insert the "T" on the one at the back.

Note: If the system is controlled by a single height valve and a dial already indicates the air pressure, it is possible to connect to this pressure indicator in the cab.

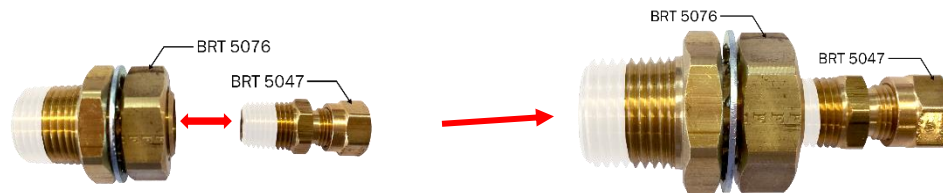
4. Insert the cut air line and the ¼" BRT 5220 tube into the "T" fitting and lead this tube to the front of the tractor in the cab.
5. Insert the BRT 5220 tube into the BRT 5792 fitting and route this tube to the 58-10605-001 air sensor, installed in the cab, to connect them together.

Note: To ensure a seal between fittings, use teflon.

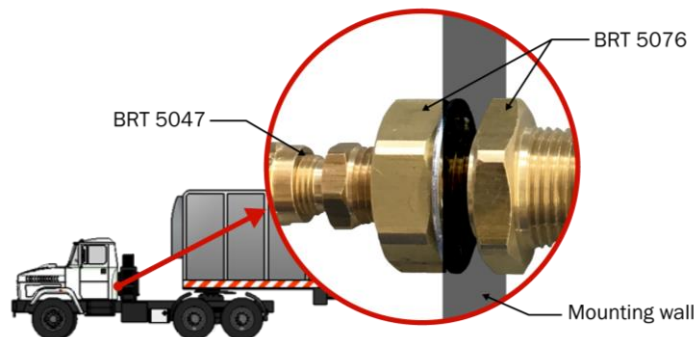


Note: Make sure that the sensor is installed vertically, downwards, to prevent water or condensation from accumulating in the sensor and damaging it.

6. Assemble BRT 5047 with BRT 5076 component as shown below.

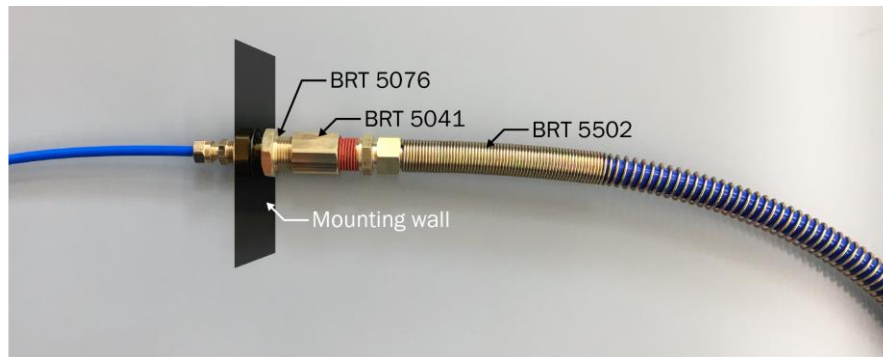


7. Make a 1-in. diameter hole in the mounting wall.
8. Insert the assembly made in Step 6 into the hole from the outside and from the side of the BRT 5076 (the part on the side of the BRT 5047 part on the front side of the truck).



9. Secure everything from the inside with the washer and nut from the BRT 5076 component.

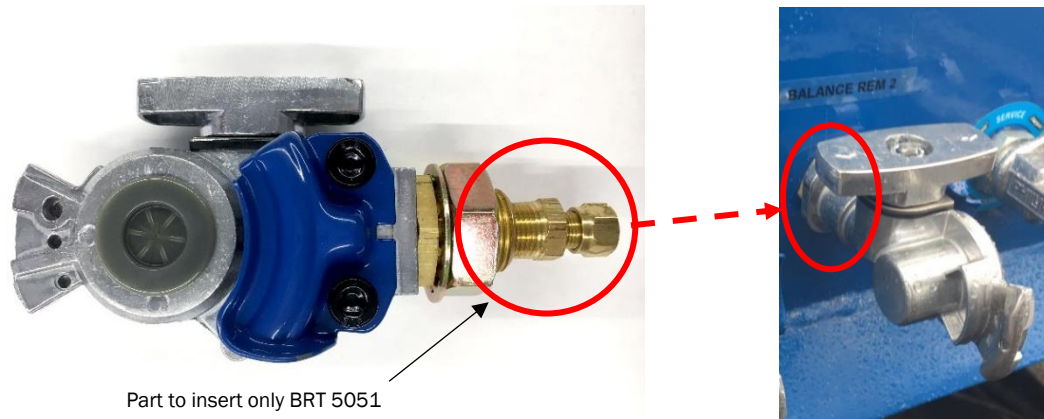
10. Insert the *BRT 5220* tube into the *BRT 5047* component and route this tube to the 58-10605-001 air sensor to connect them together.
11. Connect all 58-10605-001 air sensors to the communication box on the inputs. It is important to identify the lines to properly configure the inputs in the communication box afterwards.
12. On the outside, screw component *BRT 5041* to part *BRT 5076* and connect the right (longest) side of the *BRT 5502* twisted air hose.



13. On the other side of the *BRT 5502* air hose (the side closest to the spirals), connect the *BRT 5556* service hand.

Trailer end

14. Identify the number of height valves on the trailer.
15. For each system controlled by a valve, an air line must lead to the V5 communication box.
16. Cut the air line as close as possible to the balloon to insert a *BRT 5053* or *BRT 5055* "T" fitting² (depending on the size of the air line tube).
17. Insert the cut air line and ¼" *BRT 5220* tube into the "T" fitting and lead this tube to the front of the trailer.
18. Make a 1-in. diameter hole in the mounting wall to insert the *BRT 5565* service hand with valve.



19. Insert the *BRT 5051* fitting into the *BRT 5565* valve and insert the *BRT 5220* tube into the fitting.



20. Attach valve *BRT 5565* and service hand *BRT 5556* together.

Note: The air line is closed when the handle of the BRT 5565 valve is perpendicular (as shown in Step 18, right picture).

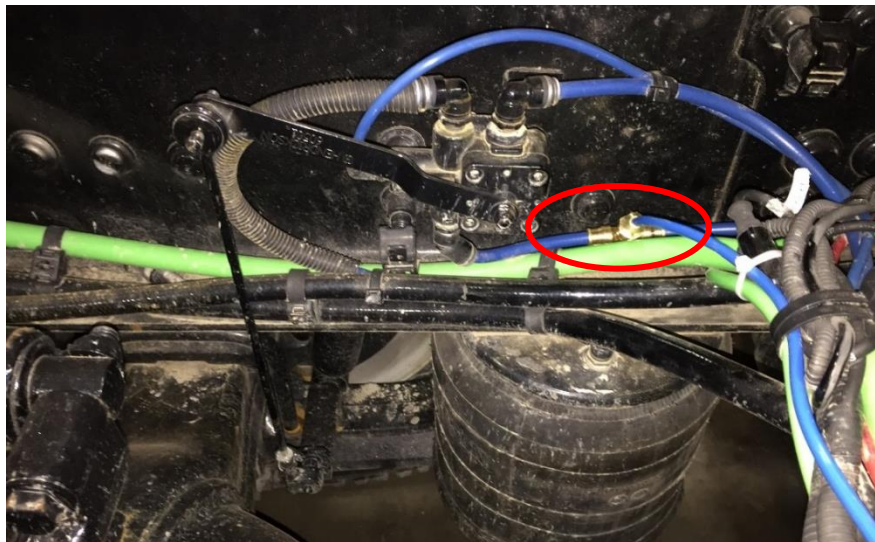
² For a group of 3 axles, insert the "T" on the middle one. For a group of 2 axles, insert the "T" on the one at the back.

Installation on 6 - 10 - 12-wheel truck configuration

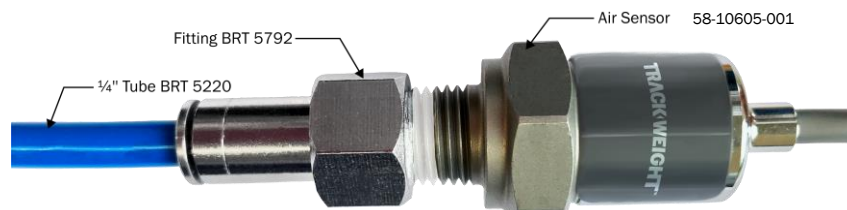
1. Identify the number of height valves on the truck.
2. For each system controlled by a valve, an air line must lead to the V5 communication box.
3. Cut the air line as close as possible to the balloon to insert a *BRT 5053* or *BRT 5055* "T" fitting (depending on the size of the air line tube) on each group of balloons controlled by a valve.

Note: If the system is controlled by a single height valve and a dial already indicates the air pressure, it is possible to connect to this pressure indicator in the cab.

4. Insert the cut air line and ¼" *BRT 5220* tube into the "T" fitting and lead this tube to the front of the truck.



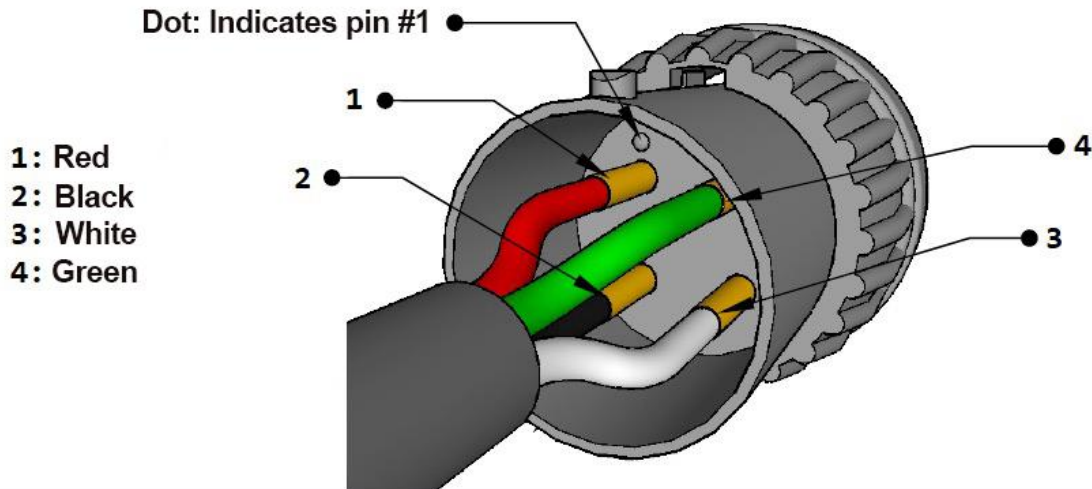
1. Insert the *BRT 5220* tube into the *BRT 5792* fitting to connect it to the 58-10605-001 air sensor, installed in the cab, to then connect the same sensor to the communication box afterwards. Identify the lines to properly configure the inputs in the communication box afterwards.



Note: Make sure that the sensor is installed vertically, downwards, to prevent water or condensation from accumulating in the sensor and damaging it.

Appendix 1 - Matching sensor signals

V5 load cell (RT sensor) color and description:



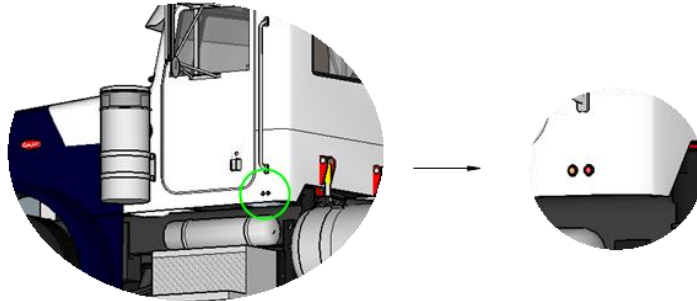
Color of wire	Red	Black	White	Green
Position	1	2	3	4
Name	ALIM (+)	GND (-)	Signal (-)	Signal (+)

The V5 scale adjusts the ALIM voltage to +10.0 VDC relative to the GND, which matches the recommended value.

The adjustment and operating voltage is read between the green and white wires.

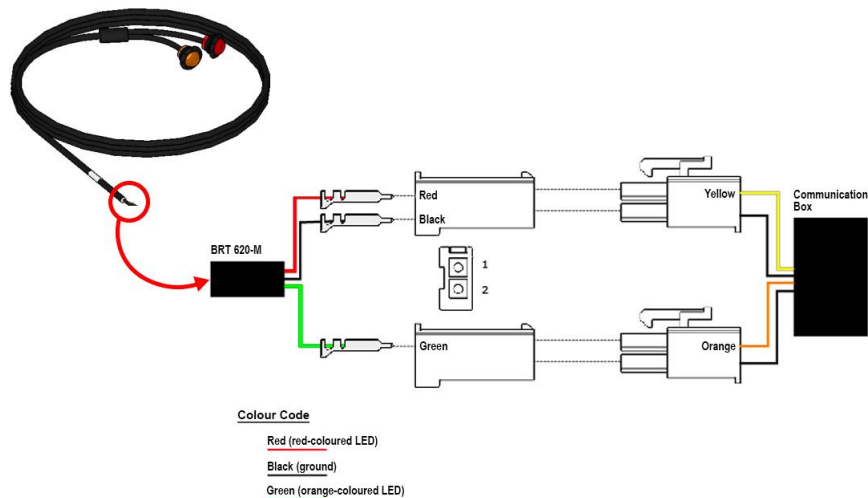
Installation of optional accessories

Exterior lights/ alarms (59-30072-001, 59-30072-002)

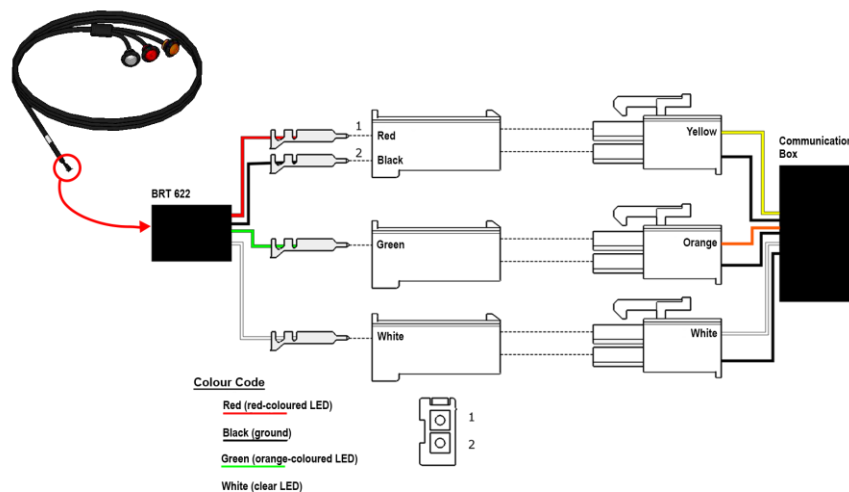


Note:
The illustration shows the lights installed directly on the truck chassis. However, a bracket is also available.

Connection diagram for the set of 2 lights (59-30072-001):



Connection diagram for the set of 3 lights (59-30072-002):



* The gland is shared in the communication box

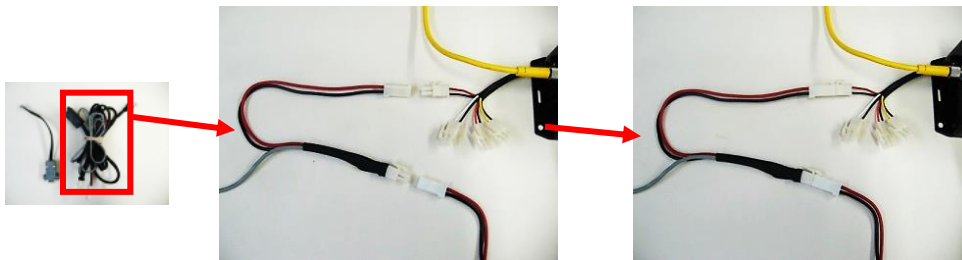
Printer (49-10301-001)



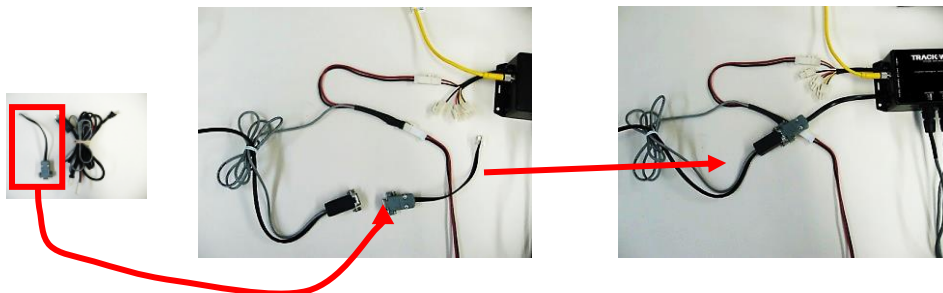
1. Disconnect the power wire (red and black) from the communication box.



2. Connect the wire supplied with the printer to the "Power - 12/24 VDC" port (red and black) of the communication box and the other end to the power wire.



3. Connect the 2nd wire (the adapter) to the "Printer - RS232" port of the communication box.



4. Connect the black wire (the one from step 2) into the printer.



Contact Us

This manual has been produced to standardize the installation of V5 products, as well as related optional accessories.

For all technical questions during installation, please contact the Vulcan Technical Service Department.

Vulcan On-Board Scales

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Kent, WA 98032 USA

Toll-free: 1 800-237-0022

Business hours

Monday to Friday

8:00 am to 5:00 pm (Pacific time)

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44-30102-001 Rev. A

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Doc. xxxxxxxxRev. A, xxxxxx

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