

MANUAL

Acceval BCB-1



TPRS Control Box for Trailers and Semi-Trailers

INDEX

1. TPRS Control Box	02
2. Main Elements of the Control Box	03
3. Installation and Connection	04
4. Commissioning Check.	05
5. Pressure Adjustment	06
6. Warning Levels	07
7. Maintenance	07
8. Diagnostics	07
9. Anchoring Drills Template	08

1. TPRS Control Box

The Acceval BCB-1 Control Box is used to control the TPRS system (Tire Pressure Refill System) of trailers and semi-trailers.

TPRS systems maintain the preset tire pressure to minimize tire wear, maximize fuel economy and prevent potential blowouts.

In the event of a puncture in a tire, the system automatically introduces air into said tire so that the vehicle can temporarily continue moving and warns the driver of this, thus avoiding the danger and difficulties of having to stop on site to change the wheel.

In the event of such a large air leak that the system could not compensate, the driver would be warned to stop as soon as possible.

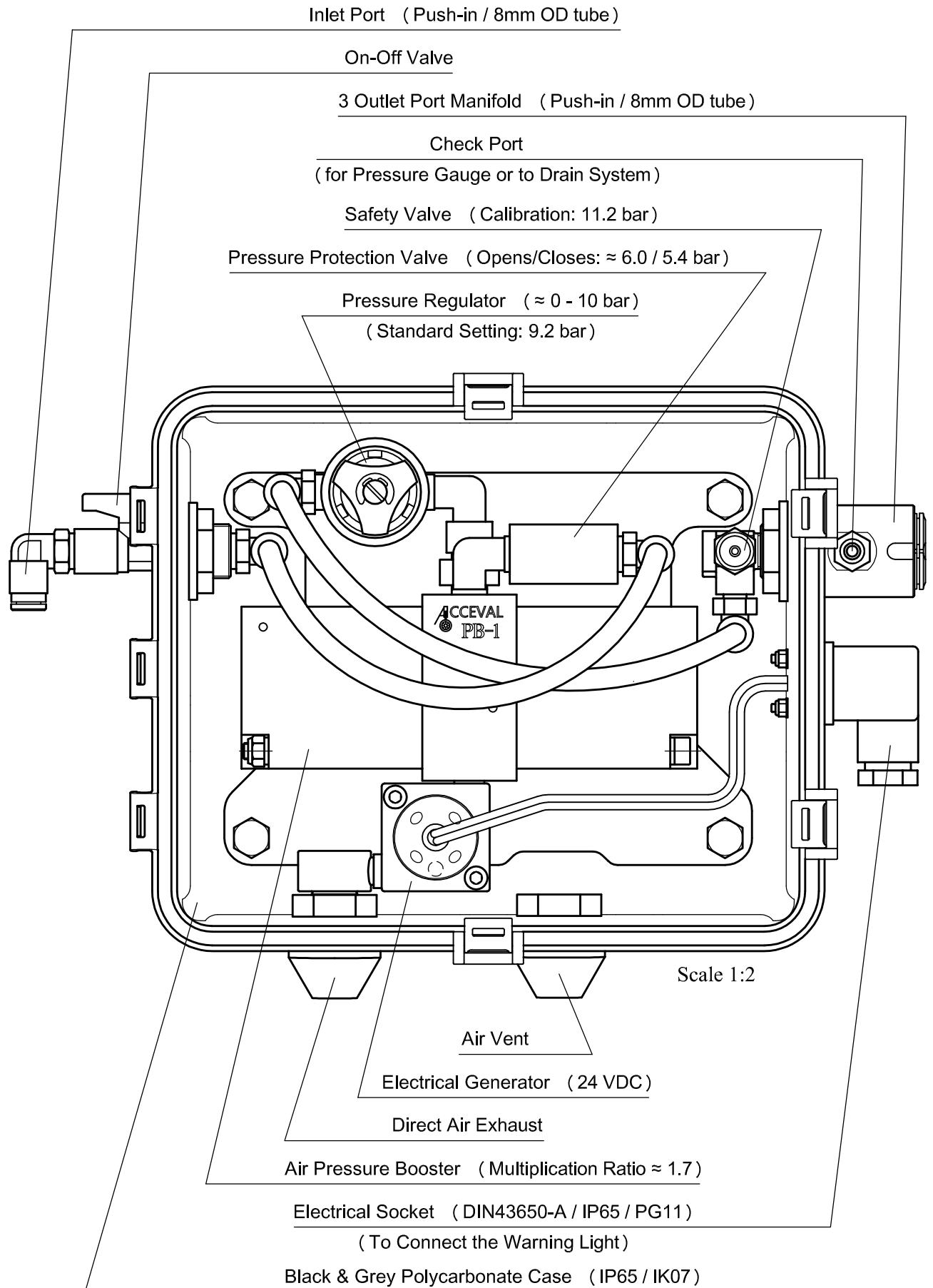
To achieve this, the Control Box takes compressed air from vehicle's pneumatic system and, when necessary, refills the tires with air through its connection to the TPRS system wheel elements (stators, rotors, hoses, etc...) that are not part of the control box.

The Control Box also has an electrical connection port to plug a cable that reaches a warning light, visible to the driver, to notify him of the events described above.

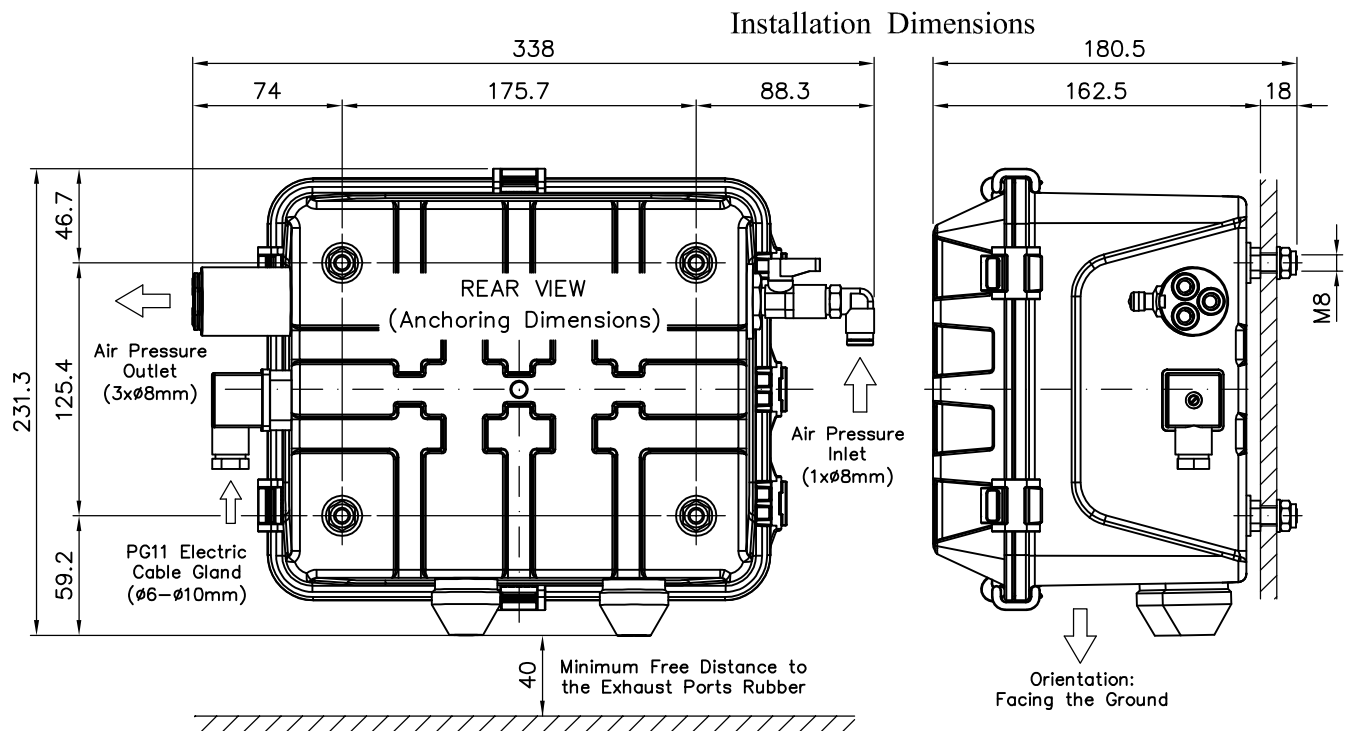
The Control Box has a small electric turbo-generator that is driven by the exhaust air from the pressure booster for electrical activation of the warning light, so it does not need power supply from the vehicle.

The installation, adjustment, maintenance and repairs of this Control Box can only be carried out by workshops authorized by Acceval s.l..

2. Main Elements of the Control Box

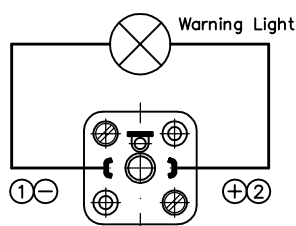


3. Installation and Connection



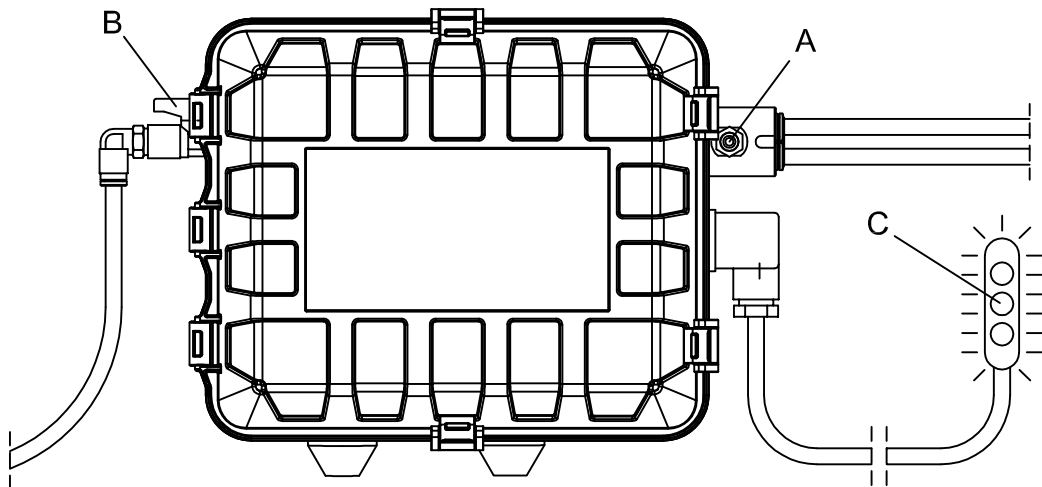
1. The Control Box must be installed in a protected and easily accessible area in the vehicle, with enough space for the inlet and outlet air tubes, the electrical cable for the warning light, a minimum vertical clearance of 40mm with the exhaust rubber and space to open the box cover.
2. Four holes with a diameter of 9-10mm must be drilled according to the distances indicated in the drawing above, for which the template at the end of this manual can be used.
3. The control Box must be placed in its location by inserting its four rear anchoring screws into the corresponding four holes in the vehicle.
4. Now the four washers and the four m8 lock nuts must be installed on the box anchor screws, on the back of the vehicle anchor plate, and tighten them with a torque of 25 Nm.
5. An 8mm OD air tube (PA) will connect the inlet port of the box with the vehicle's 6.0-8.5 bar compressed air supply (Air suspension circuit or air suspension tank. Never to the brake circuit) .
6. Up to 3x 8mm OD air tubes (PA) will be used to connect the three outlet ports of the control box to the axles and wheel elements of the TPRS system (Fit plugs if less than 3 or T-fittings if more than 3) .

Electrical Connections



7. Our DIN43650-A PG11 connector must be removed to be installed at the free end of the electrical cable (Round with a diameter of 6-10mm) of the warning light, taking into account the polarity indicated in the drawing on the left (Base where said connector plugs to the box) . Plug the connector to the box and lightly tighten its central security screw.

4. Commissioning Check



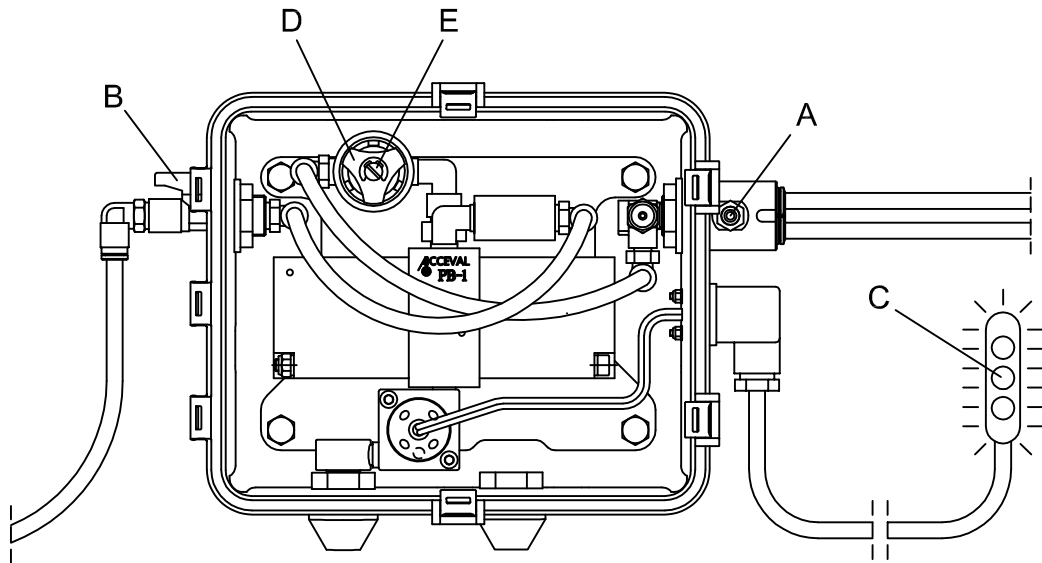
The On-Off Valve (B) must be kept close before connecting the system to the wheels to start working.

Take into account that, due to the non-return valves in the wheel hoses, the pressure in the Tires may be approximately 0.2 bar less than the output pressure of the Control Box.

The Control Box outlet pressure is pre-set at 9.2 bar as standard.

1. Remove the cap from the Check Point (A) and connect a pressure gauge (8V1 thread) .
2. Open On-Off Valve (B) and check the pressure value on the pressure gauge when booster finishes pumping.
3. Remove the pressure gauge and relieve the output pressure by pressing on the schrader valve of the Check Point (A) .
4. Check that the Warning Light (C) is flashing while the booster is pumping.
5. Wait for the end of the booster pumping process and reconnect the pressure gauge to check the correct output pressure value of the control box.
6. Remove the pressure gauge and put the cap back at the Check Point (A) .

5. Pressure Adjustment



1. Unlock the fixing tabs and open the cover-door.
2. Remove the cap from the Check Point (A) and connect a pressure gauge (8V1 thread) to check the output pressure value.
3. Remove the pressure gauge and relieve the output pressure by pressing on the schrader valve of the Check Point (A) .
4. Check that the Warning Light (C) is flashing while the booster is pumping.
5. Wait for the end of the booster pumping process and reconnect the pressure gauge to check the output pressure value.
6. Loosen by hand the Lock Nut (D) of the Pressure Regulator by turning it anti-clockwise while keeping the Adjustment Screw (E) immobile with a screwdriver.
7. Use the screwdriver to increase the outlet pressure by turning the Adjustente Screw (E) clockwise or decrease it by turning the screw counterclockwise (Responsive adjustment, turn little) .
8. Tighten by hand the Lock Nut (D) of the Pressure Regulator by turning it clockwise while keeping the Adjustment Screw (E) immobile with a screwdriver.
9. Remove the pressure gauge and relieve the output pressure by pressing on the schrader valve of the Check Point (A) .
10. Wait for the end of the booster pumping process and reconnect the pressure gauge to check again the output pressure value.
11. If necessary, repeat points 7 to 10 until the correct setting is achieved.
12. Remove the pressure gauge and put the cap back at the check point.
13. Close the cover-door and lock the fixing tabs.

6. Warning Levels

A. Flashing Warning Light

- * The Journey must not be interrupted.
- * The TPRS system is compensating the pressure loss.
- * Tires and the system must be checked when stopped.

B. Lighted Warning Light (Constantly illuminated)

- * The vehicle must stop as soon as possible.
- * The TPRS system cannot compensate the pressure loss.
- * Tire or the system must be repaired by an authorized workshop.

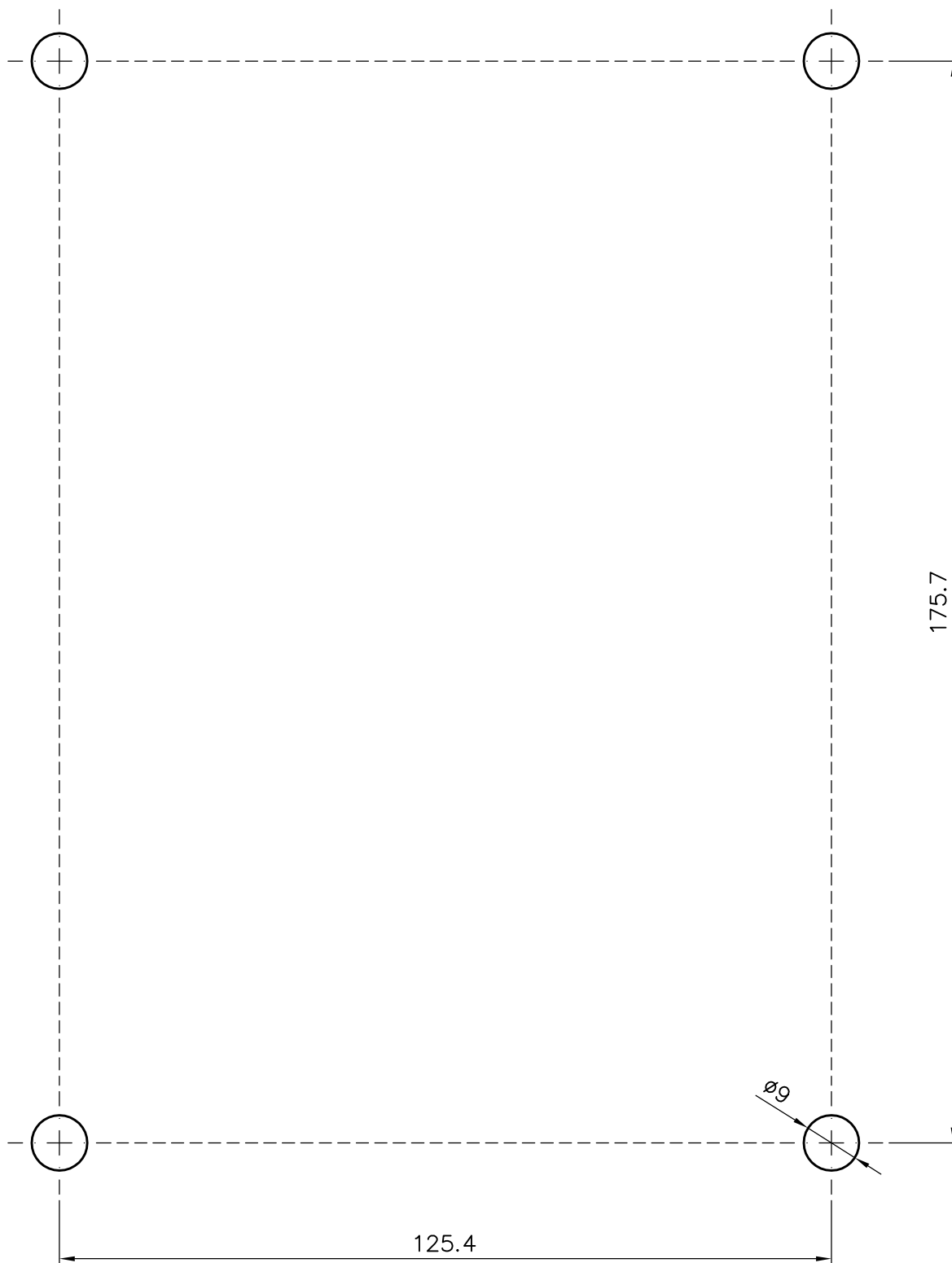
7. Maintenance

Annually check the setting of the outlet pressure and the operation of the warning light.

8. Diagnostics

Symptom	Cause	Solution
Tire pressure is too low	On-Off valve is closed	Open the On-Off valve
	Outlet pressure setting is too low	Increase the outlet pressure
Tire pressure is too high	Manual tire inflation was excessive	Deflate the tire
	Outlet pressure setting is too high	Reduce the outlet pressure
Warning light is switched on	Leak in a tire	Repair the tire
	Leak in the system	Repair the system
	During Commissioning	This is normal
Warning light is switched off during pumping operation	Faulty led warning light	Replace led warning light
	Faulty electrical generator	Replace electrical generator
	Damaged or disconnected wire	Check wire & connections
Control box not working	Inlet pressure less than 6 bar	Check inlet pressure
	Faulty box item	Locate & replace the faulty item

9. Anchoring Drills Template





C/ Barranc Pascual, n.23
Pol. Ind. Campo Anibal
E-46530 PUZOL
Valencia - Spain

Tel. (+34) 96 141 15 18
Fax. (+34) 96 141 15 60

acceval@acceval.com
www.acceval.com