



Air Suspension Digital Control Unit

Product Instructions

SMART Front / Rear System

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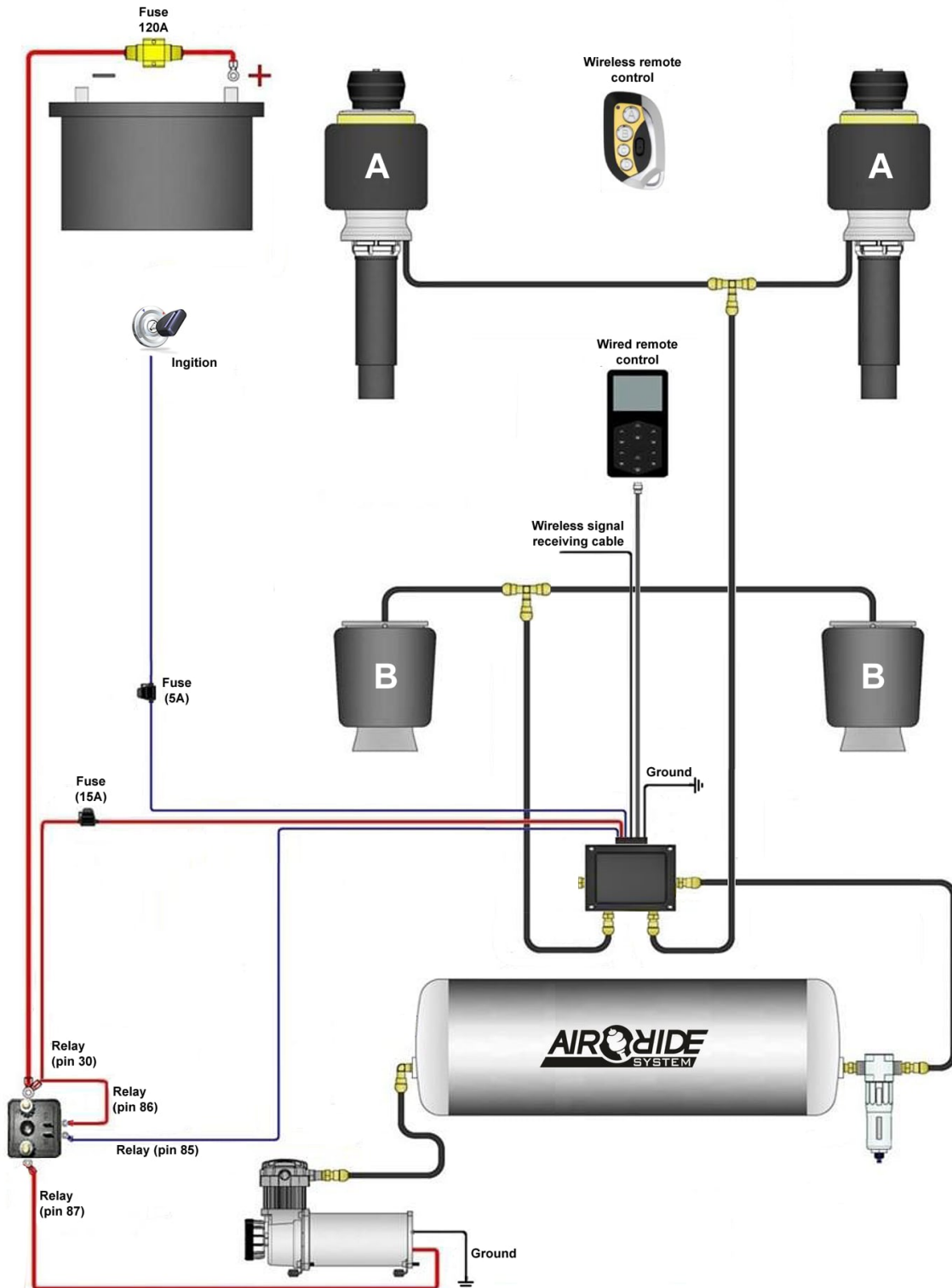
INTRODUCTORY INFORMATION

The airRIDE-System.pl suspensions are not approved or certified to be used on public roads. They are built specifically for exhibition cars. Anyone who uses them on the roads, does it on their own responsibility. We have been building air-suspensions since 2011 and have a long history of working with sports suspensions.

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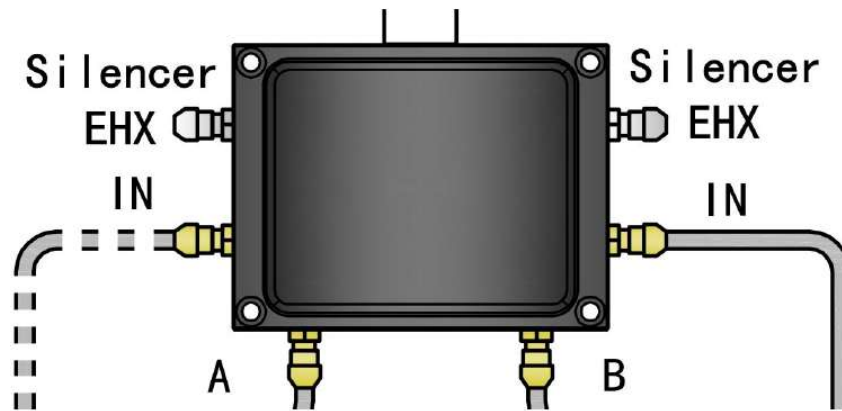
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[1] SYSTEM LAYOUT DIAGRAM



[2] AIR-LINE INFO AND MAIN RULES FOR MANIFOLD AND CONNECTIONS

I. Connecting to manifold



1. Plan proper component location first. Ideally, the manifold should be located at a level above the compressor and tank to avoid compressor ingested water from gathering in the manifold. This is most important for vehicles operated in below-freezing climates.
2. Air compressors take in moisture/humidity from the air and deposit it in the airtank. Our system includes a water trap that reduces moisture to enter the manifold. However – air tank must be regularly purged to eliminate the possibility of water entering the manifold. Install the filter between the manifold and the airtank!
3. Port A is connected to the Front and Port B is connected to the Rear bags.

Joint assembly guide

1. Apply sealant on the joint thread if the thread is without o-ring.
2. Screw the connector thread into the interface screw hole and tighten.

II. Connecting Bags / Compressor / Air-Tank

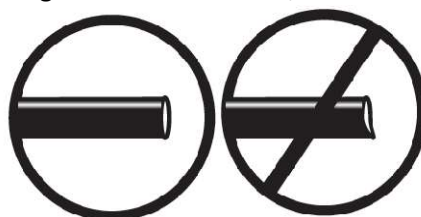
According to the "system layout diagram", the bags, the air-tank and the solenoid valve group are connected by the air-pipe.

It is recommended to install an air filter! The air filter must be installed to ensure stable operation of the pneumatic system and is necessary for warranty!

You can use just one or two IN ports to connect the airhose from tank.

Note:

1. Use standard pipe cutters or blades to ensure that the ends are as round and flat as possible.
2. The air line is away from sharp edges and heat sources, if necessary, using insulated casing.



[3] SYSTEM TEST

When most of the components of the system are installed and connected - the system can be tested.

Note: The test procedure is carried out on a lift as described below.

System Test

I. Start the car, the compressor will start to inflate the air tank. When the airtank is inflated to the maximum pressure - the compressor will automatically turn off.

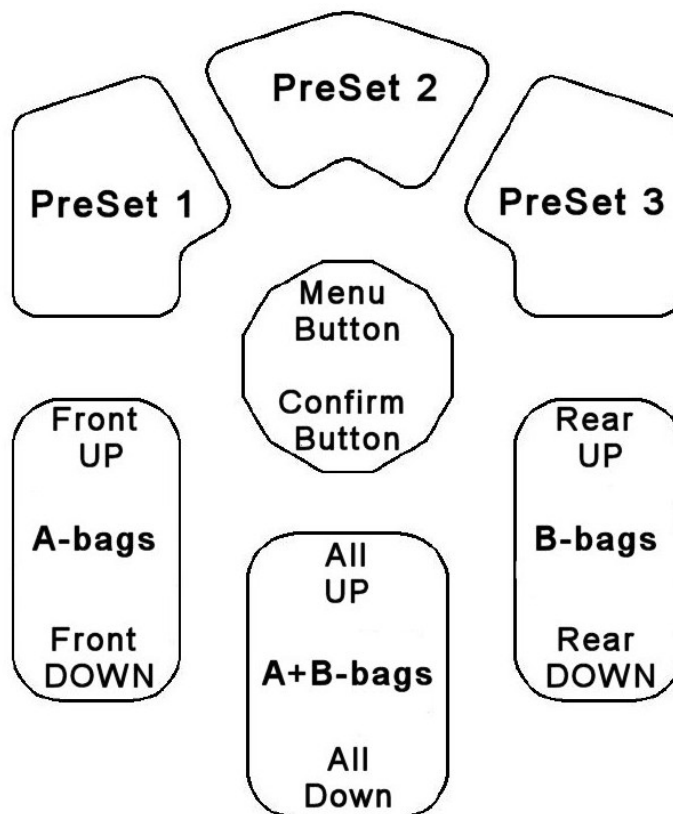
II. Adjust the wired remote control button to see if the corresponding wheel position will rise and fall. When the body is raised, air will be consumed, and the compressor will start automatically when necessary.

III. When the vehicle is on the jack, the inspection of the mechanical system can be done properly: check the clearance between the entire range of the air spring and the surrounding components.

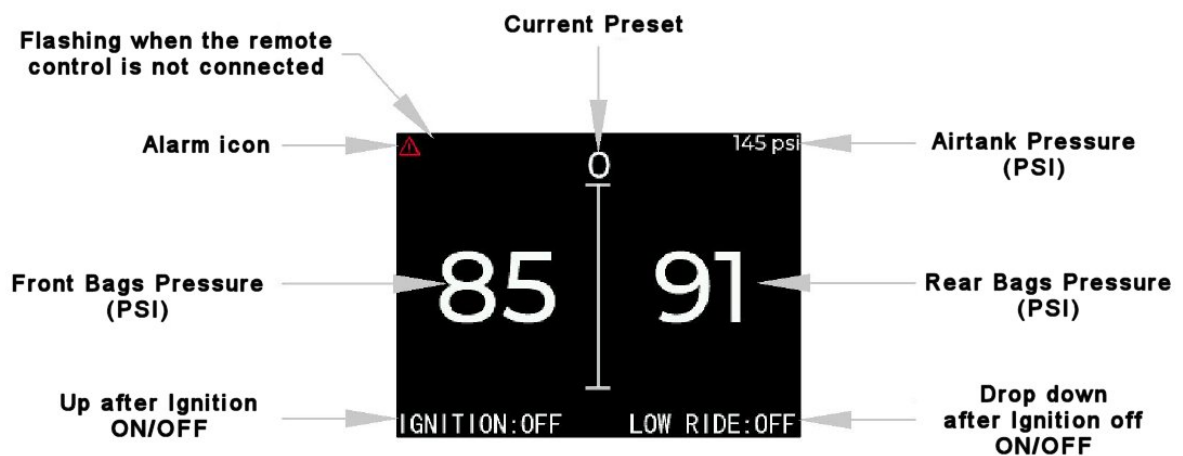
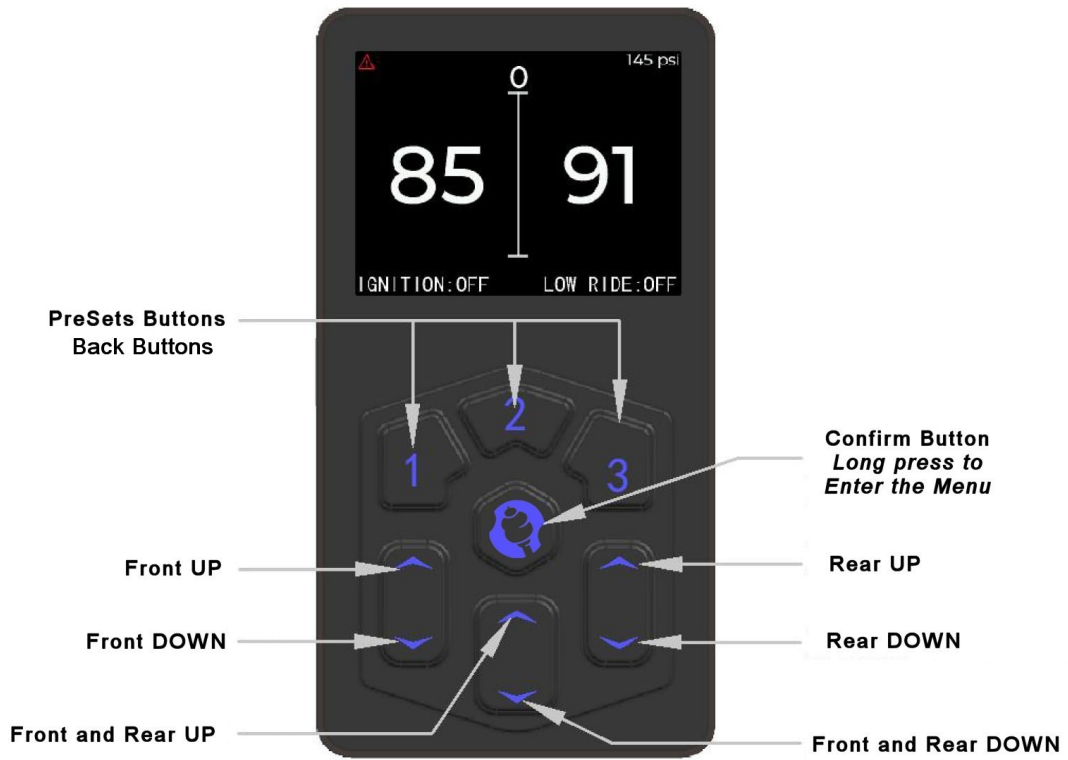
IV. Check all threaded fittings for leaks with soapy water or another tester. When repairing the leak, first lower the lift, then turn off the ignition and let go of the air from the tank.

[4] WIRED REMOTE CONTROL

I. Buttons Description – main functions



II. Wired remote control the display interface



[5] MAIN FUNCTIONS

Main Functions	Subfunctions	Function	Factory value
PreSets calibration	1	Calibrate the value and save it to PreSet 1	10 10
	2	Calibrate the value and save it to PreSet 2	59 59
	3	Calibrate the value and save it to PreSet 3	129 129
Low lying setting	Low Down	Empty the airbags to minimize the car.	/
	Low Down With Ignition Off	Automatically activate the low lying function when the car is turned off.	Close
Ignition setting	1	The car automatically enters into gear 1 when the ignition is turned on.	Close
	2	The car automatically enters into gear 2 when the ignition is turned on.	
	3	The car automatically enters into gear 3 when the ignition is turned on.	
Other Settings	Language Settings	Modify the display language	Chinese
	Barometric Units	Modify the unit of displaying air pressure (it will be converted automatically).	psi
	Air pump control	Set the air pressure value for pumping and stopping the air pump	100~169Psi 0.69~1.17MPa
	Display selection	Select the display mode of the 2 airbags	Left-right display
	Wireless pairing	Pairing wireless remote control	/
	Factory Restore	Reset all parameters to the factory state.	/
	Fault logging	Display the current fault of the valve body	/
	About device	Displays the version number of the current system	/

[6] REMOTE CONTROL MENU

I. How to set PreSets

Press and hold the "Menu / Confirm" key for 2-3 seconds to enter the menu.

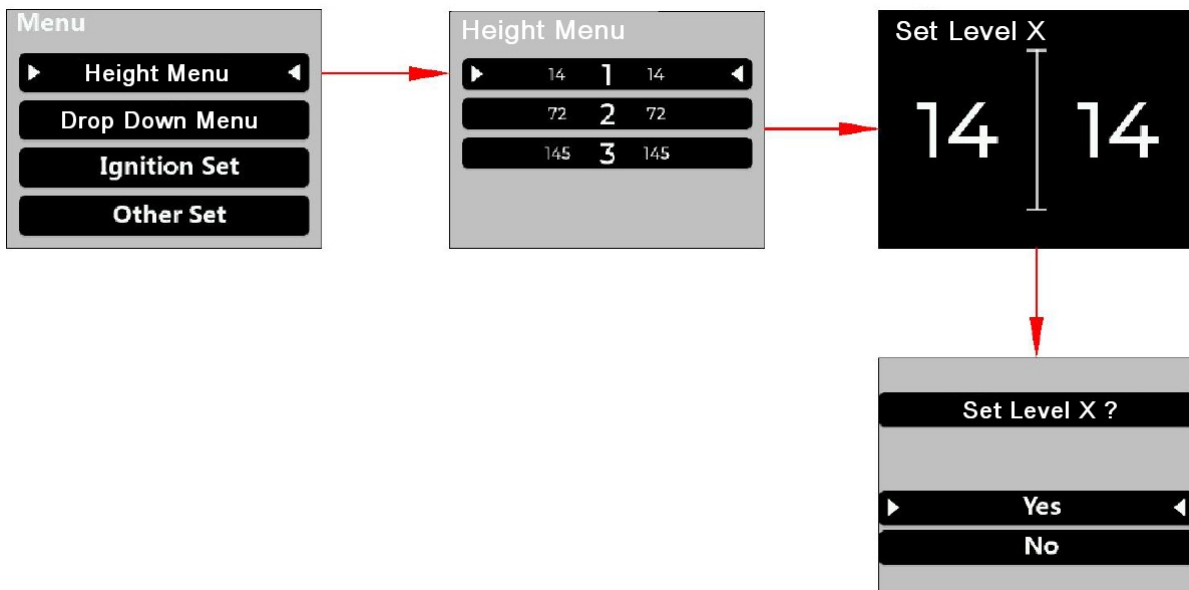
This product has 3 presets – by pressure, and You can set 3 different car heights according to Your preferences. Each of the 3 positions can be turned on / off independently.

Method one:

To set the Presets You have to go inside the „HEIGHT MENU” and choose position You want to change from 1 to 3. Then if You are in the chosen LEVEL – set the pressure for each axle. To save it push the central key to enter the „Set Level X” menu and choose YES.

Method two:

Set the value on pressure in front and rear bags You want to save. Push and hold key 1,2 or 3 - You want to save Your Preset. Select „Confirm” key to save the setting or select „Cancel” to not save.



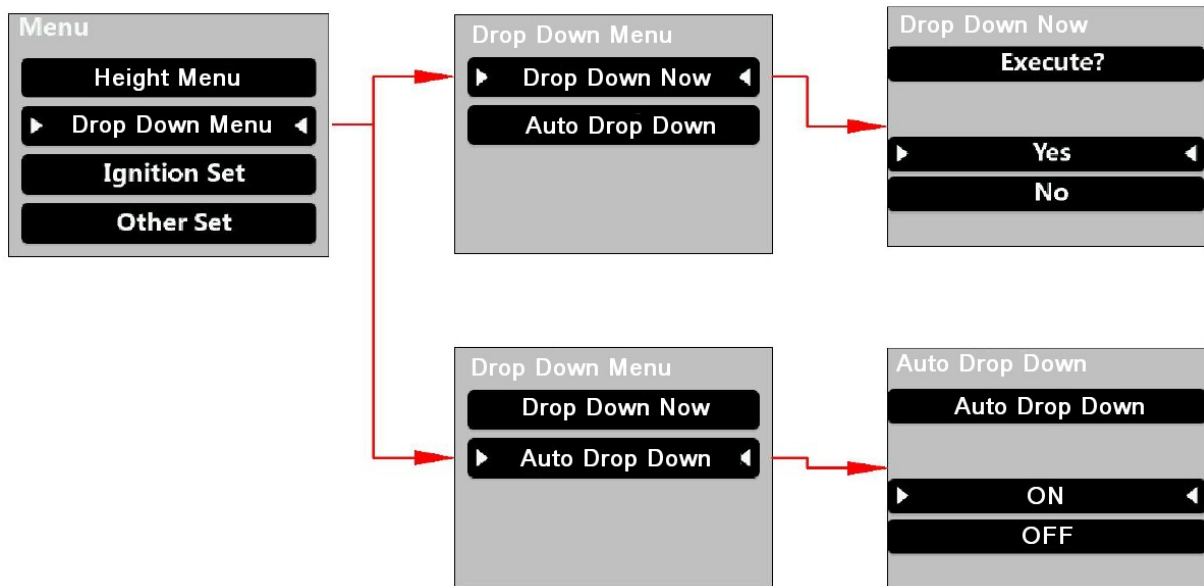
II. How to use PreSets

Push the key You want to set the car – 1,2 or 3. Wait a few seconds to finish the operation (using the presets to automatic adjustment will have $\pm 2\%$ error value). To be sure that car will be set up correctly You should do this operations on flat surface.

Prohibited to operate while driving!

III. Drop Down Menu

- 1) System has an option that car can go full down (0 PSI in the bags) automatically after ignition is off or manually from menu.
- 2) You can put car on ground in this menu option. Enter „DROP DOWN MENU” and choose „Drop Down Now” and push the center button. Then system asks You if You want to execute the option – YES/NO.
- 3) „Auto Drop Down”- You can put car on ground automatically after ignition is off. In this menu You can choose OFF if You do not want to use it or ON – if You want to turn this function on. Then after ignition is off - car will automatically drop max down.



Before you lower the car max down, make sure the wheels are straight forward!

Prohibited to operate while driving!

IV. Ignition settings

1) After entering „Ignition Set” You can select one of 3 presets. Chosen level/pressure will be executed after ignition is on.

2) Autoleveling can be ON / OFF.

Enable: Select "Yes" After level selection and press the confirm button.

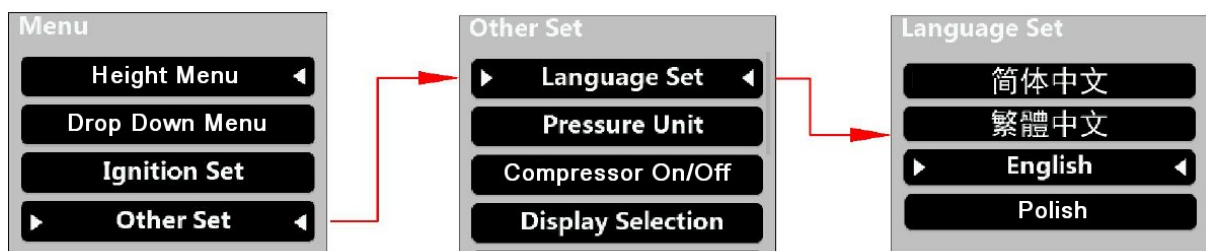
Disable: Select "No" After selection and press the confirm button.



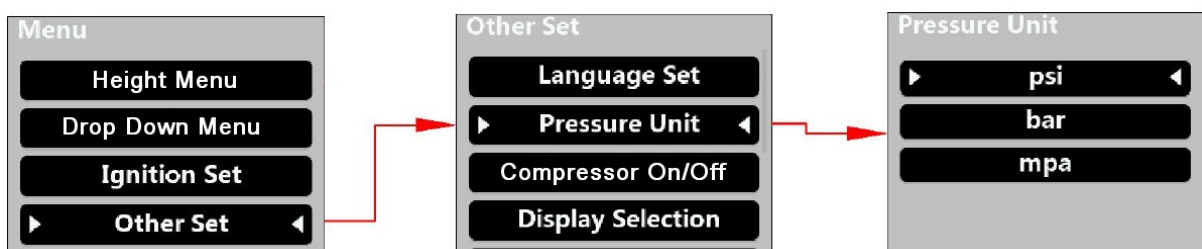
IV. Other settings:

1) **Language:** This product is available in four languages: Chinese, English, Polish, Japanese.

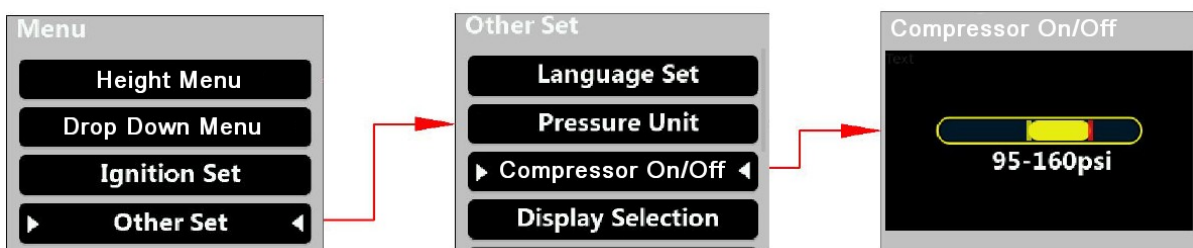
To change the language enter "Language", select your own language, and click "Confirm" button.



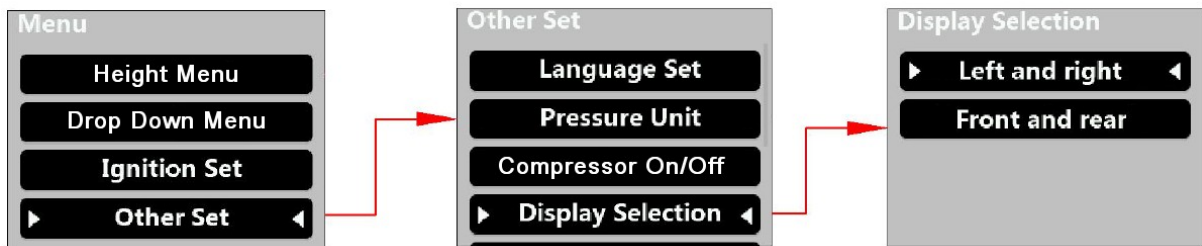
2) **Pressure Unit:** Enter the „Pressure Unit” and choose PSI, BAR or MPA. After selecting it will return to the initial interface automatically.



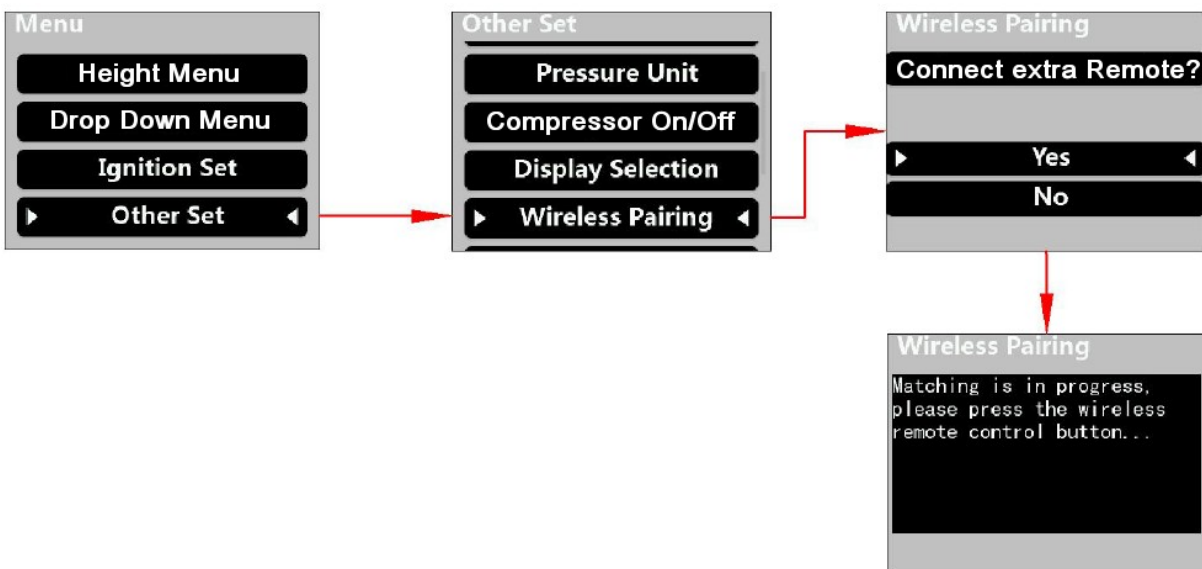
3) **Compressor On/Off:** Use the confirm button to adjust the required air pressure (On or Off) for the slider (the maximum Off pressure can be max about 200 psi). Use main up or down button to switch the slider (compressor starts when the pressure is below the set minimum, and stops when the pressure will reach maximum).



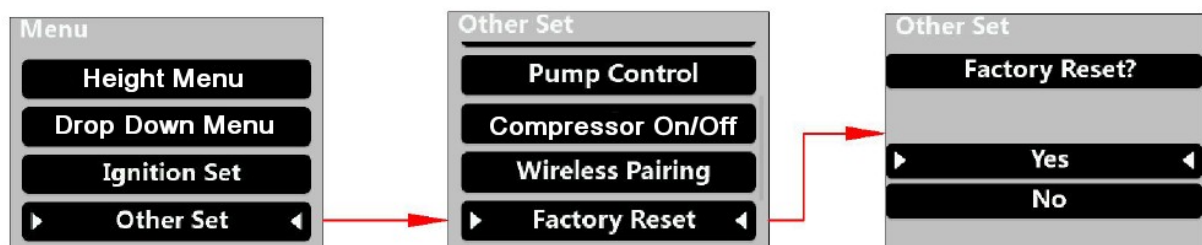
4) **Display Selection:** The interface shows the air pressure of both axles (Front and Rear). When displaying left and right, the left side shows bags A (front) and the right side shows bags B (Rear). When displaying top and bottom, the top shows bags A (Front) and the bottom shows bags B (Rear). To choose it just select a display mode and press to confirm.



5) **Wireless pairing:** The set includes small wireless control. To use it You have to pair it with manifold. Select wireless pairing In menu. System will ask „Connect extra Remote?“ - select Yes. Press any button of the wireless remote control in near the manifold within 10 seconds and system will show that the pairing is successful.



6) **Factory Reset:** Reset allows you to restore the system to factory settings.



7) **Error Record:** It shows current faults.



8) **About devices:** It show info about system.



[7] WIRELESS REMOTE CONTROL

1. The set includes wireless remote control. To use it You have to pair it with manifold (Point IV – 5). After the pairing is successful, long press the button realize the chosen axle to go up or down.



2. After the car is turned off, if the car battery voltage is more than 12v - it can continue to use the wireless remote control to control the lifting/lowering (if You still have air in the tank). If the car battery voltage is less than 12v, the system will automatically cut the power off, and the wireless remote control can not be used.

3. Remote control distance is about 15 meters.

[8] TROUBLESHOOTING GUIDE

SN	Fault Code	Fault Code Schematic	Solution
1	E-01	Air tank air pressure sensor failure	Replace the manifold
2	E-02	Air pump inflation abnormal	Check if the compressor harness is properly connected or replace the compressor
3	E-03	Pressure sensor A is faulty	Replace the manifold
4	E-04	Pressure sensor B is faulty	Replace the manifold
5	E-05	/	/
6	E-06	Low ignition voltage	/
7	E-07	High ignition voltage	/
8	E-08	Low Battery Voltage	/
9	E-09	Battery voltage high	/

[9] COMPRESSOR INSTALLATION AND USE

I. Initial REMARKS:

1. Do not try to repair or modify the compressors.
2. Do not use the product where it can be flooded with water or other liquids.
3. Compressor should only be used in 12V installations.
4. The products should never be left unsupervised when in use.
5. Never allow children to use the compressor.
6. The compressor heats up considerably during and directly after use. Do not touch any of its elements with bare hands during and directly after the use.
7. Never use the product close to fire or explosive materials.
8. Never use the device in places where oxygen is supplied.
9. Do not pump anything other than atmospheric air with the device.
10. Do not direct the air nozzle at another person.
11. The compressor is equipped with an automatic temperature off switch. Always disconnect the device from the power source when the switch is activated.
12. Use only in well ventilated spaces.

Please, read and follow the installation manual to avoid bodily harm, as well as compressor or vehicle damage.

II. Installation instructions:

Choosing the right spot for the air compressor will help provide long and seamless service life of the compressor.

1. Select flat surface in a secure spot where the compressor can be installed.
2. To maximize the performance of the air compressor, it is best to place it close to the battery.
3. Select an installation place as far from heat sources as possible.
4. Never install the compressor in places where it is likely to come into contact with water.
5. Make sure that the air filter inlet is located in a dry place.
6. Seal the connection well. Large amount of Teflon tape is not recommended.

INSTALLATION:

1. Disconnect the ground cable from the vehicle battery.
2. Temporarily place the air compressor in the spot where it will be installed.
3. Connect the ground wire to the battery (-) or appropriate grounding point.
4. Installation of the air compressor is done using 4 screws in designated places.
5. Install the provided air filter.
6. The compressor is equipped with steel-braided hoses, with 380C / 444C -1/4" or 480C - 3/8" NPT threading at the ends. Do not remove the hose from the compressor.
7. The compressor hose has an integrated backflow preventer. It should not be removed!
8. Connect + cable to the compressor, from the relay to the pressure switch.
9. Insert an appropriate power fuse onto the + cable from the battery. Place the fuse as close to the power source as possible.
10. Before connecting to the power source, double check all connections.
11. Connect and test the system by starting the compressor for a short time and check the pressure increase in the air tank.
12. Once the air pressure reaches the value set by the pressure switch, the compressor should shut down. Check all of the air connections, e.g. with water and soap solution.

NOTICE:

1. Always use the compressor at or below its maximum pressure level.
2. If, at any given moment during its operation, the compressor shuts down automatically, do not try to restart it. You can continue to safely use the compressor after leaving it for around 30 minutes to cool off.
5. To avoid discharging the car battery, it is recommended to keep the engine running while using the compressor. The performance of the compressor is then increased.

CAUTION! Make sure the compressor does not heat up drastically. Frequent cooling of the compressor is recommended. If it reaches the temperature of 100 degrees Celsius, it can overheat and shut down!

MAINTENANCE AND REPAIRS

1. Periodically check all electric connections and all fixing screws.. Clean and tighten if necessary.
2. Periodically change the air filter. The frequency of changes depends on how frequently the device is used and the working environment.
3. Regularly clean the motor cylinder to remove dust and dirt.
4. The air compressor is equipped with motor lubrication system. Never lubricate the compressor.

[10] INSTALLATION OF BAG BRACKETS

CAUTION! This step should be skipped, if you have purchased a set with shock absorbers included! To install the Bag Brackets, screw them on the thread and seal them. You can seal the Airspring Brackets using e.g. adhesive for threaded joints, Teflon, silicone, glass adhesive and other sealing compounds. The sealing of threads with larger thread size is more difficult, therefore it is recommended to use silicone-density adhesives for coarse threads with the pitch over 2mm.

An important element is the placement of the bottom bracket on the shock absorber. To optimally utilize the travel of the absorber, the fitting should be threaded low enough so that when the top bracket is pressed with hands, it touches the shock absorber casing inside the air bag (fig. 2) (fig. 3 shows what it should look like without the air bag). However, it is important to remember about the dimensions of rims and tires. When positioning the fittings, remember to first check whether they fit behind the wheel and, if necessary, correct their placement. If you want to adjust how low the car sits (when it sits too low and, for example, the wheel scrapes the wheel arch), we recommend placing a polyurethane bumper inside or over the top bracket, to reduce the down-travel of the suspension. ***In ARS2 bag suggested distance from the top of shock to the bottom of bag bracket is 8,5cm and in ARS3 bag this distance should be about 9,5cm.***

