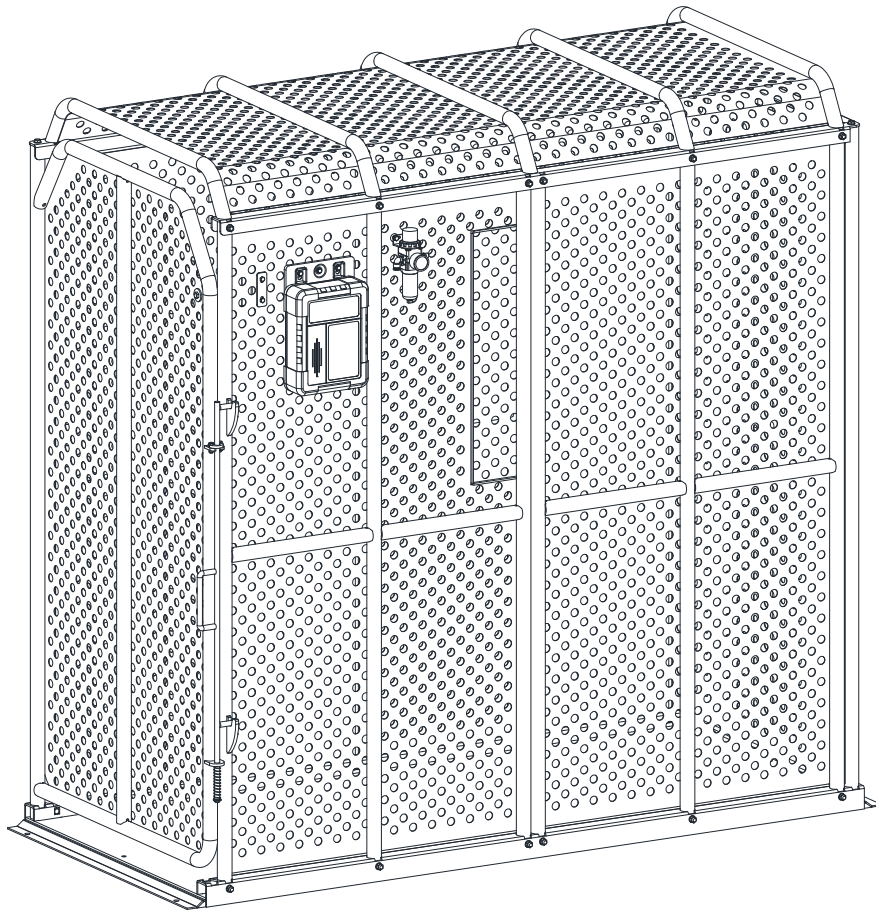


USE AND MAINTENANCE MANUAL




INFLATING SYSTEM WITH SAFETY CAGE

YCB-700



PRINTING CHARACTERS AND SYMBOLS

Throughout this manual, the following symbols and printing characters are used to facilitate reading:

	Indicates the operations which need proper care
	Indicates prohibition
	Indicates a possibility of danger for the operators
BOLD TYPE	Important information

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CHAPTER 1 – INTRODUCTION

1.1 INTRODUCTION

Thank you for purchasing the equipment. Follow the simple instructions provided in this manual to ensure the correct operation and long life of the cage. Read the entire manual thoroughly and make sure you understand it.

1.2 IDENTIFICATION DATA

The identification data of the machine are shown in the serial plate placed on the cage.

	The removal of this serial plate is strictly forbidden.
---	--

The cage may be updated or slightly modified from an aesthetic point of view and, as a consequence, they may present different features from these shown, this without prejudicing what has been described herein.

1.3 MANUAL KEEPING


For a proper use of this manual, the following is recommended:

- Keep the manual, in an easily accessible place.
- Keep the manual in an area protected from the damp.
- Use this manual properly without damaging it.


This manual is an integral part of the product: it shall be given to the new owner if and when the cage is resold.


1.4 CAUTIONS FOR THE SAFETY OF THE OPERATOR


Operators must not be under the influence of sedatives, drugs or alcohol when operating the cage.

	Before operating the cage, operators must be familiar with the function of all controls, as well as with the features shown in the chapter “Operation and use”
---	---

1.5 WARNINGS

	Unauthorized changes and/or modifications to the cage relieve the manufacturer of any liability for possible damages to objects or people. Do not remove or make inoperative the safety devices, this would cause a violation of safety at work laws and regulations.
---	--

	Any other use which differs from that provided for by the manufacturer of the cage is strictly forbidden.
---	--

	The use of non genuine parts may cause damage to people or objects
---	---

1.6 WARRANTY

The warranty is valid for a period of 12 months starting from the date of the purchase invoice.

The warranty will come immediately to an end when unauthorized modifications to the product or parts of it are carried out.

The presence of defects in workmanship must be verified by the personnel appointed by Manufacturer.

1.7 TECHNICAL SERVICING

For all servicing and maintenance operations not specified or shown in these instructions, contact your Dealer where the product has been bought or the Manufacturer's Commercial Department.

Only skilled personnel who are familiar with the product and this manual shall be allowed to carry out packing, lifting, handling, transport and unpacking operations.

TO THE READER

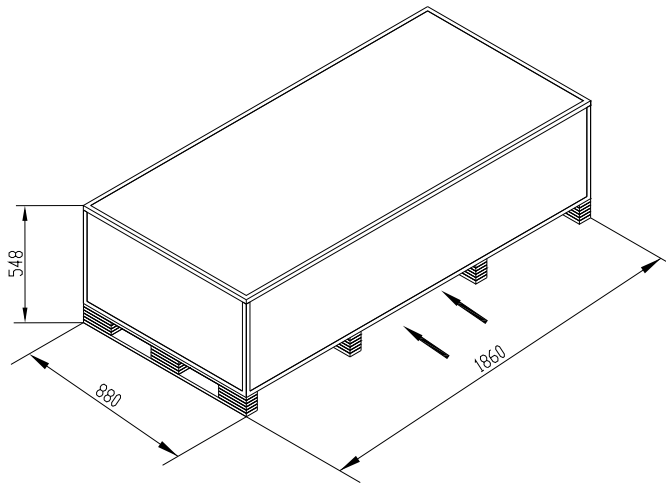
Every effort has been made to ensure that the information contained in this manual is correct, complete and up-to date. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes due the development of the product, at any time

CHAPTER 2 - PACKING, HANDLING AND STORAGE

2.1 PACKING

The packing of the cage is shown in the figure 1. The package weight is about 285kg.

Figure 1 - PACKAGE



2.2 LIFTING AND HANDLING

When loading/unloading or transporting the cage to the site, be sure to use suitable loading and hoisting means. Be sure also to hoist and transport it securely so that it cannot drop, taking into consideration the package's size, weight and centre of gravity.

2.3 STORAGE AND STACKING OF PACKAGES

Packages must be stored in a covered place, out of direct sunlight and in low humidity, at a temperature between -10°C and +40°C.

Stacking is not recommended: the package's narrow base, as well as its considerable weight and size make it difficult and hazardous.

2.4 DELIVERY AND CHECK OF PACKAGES

When the product is delivered, check for possible damages due to transport and storage; verify that what is specified in the manufacturer's confirmation of order is included. In case of damage in transit, the customer must immediately inform the carrier of the problem.

Packages must be opened paying attention not to cause damage to people (keep a safe distance when opening straps) and parts of the product (be careful the objects do not drop from the package when opening).


2.5 SCRAPPING


When your product's working life is over and it can no longer be used, it must be made inoperative by removing any connection to power sources, shall be disposed in compliance with current laws and regulations.


CHAPTER 3 – GENERAL INFORMATION

3.1 INTENDED USE

This equipment has been manufactured to grant safe inflation of tires with max. admitted pressure as per Technical Specification in the chapter 3.3.

	It is forbidden to inflate tires with a pressure higher than the pressure recommended by tire manufacturer; it is also forbidden to inflate balloons, EC-unapproved tanks or other various containers, to stay inside the cage or leave the door open during inflating operations, or even to use the pipe to blast or clean.
---	--

	A tire burst can seriously damage the structure; the deformed parts must be replaced by original spare parts.
---	--

	In particular THE MANUFACTURER cannot be held responsible for any damage caused through the use of this cage for purposes other than those specified in this manual, and therefore inappropriate, incorrect and unreasonable.
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3.2 DESCRIPTION

As shown in the figure 2, the cage is composed by a frame (1) made by formed steel pipes that the drilled metal barriers are stiffly fixed to.

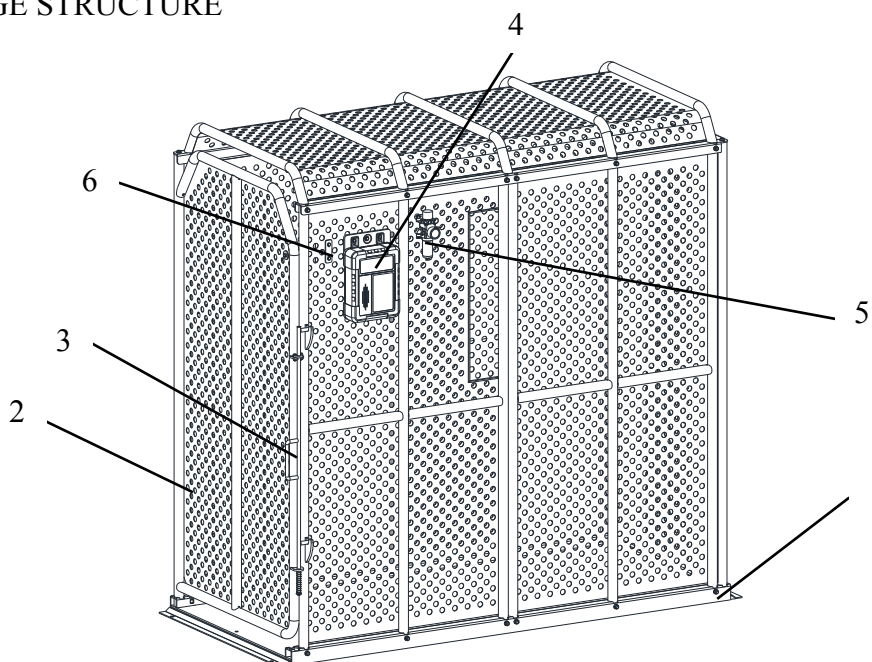
The tire is introduced through the door (2) that is normally open, kept in such position by proper hinges. The door lockup is made only by means of the spring latch (3).

The cage must be anchored to a concrete base by means of anchor screws and bolts.

The tire is inflated with the electronic inflating device (4). The connection between the inflating device and tire is made by the hose and the regulator (5) equipped with manometer.

The inflating operation must be carried out after the door is locked well. To prevent from inflating operation in case that the door is open, a safety valve (6) is installed on the door.

Figure 2 – CAGE STRUCTURE

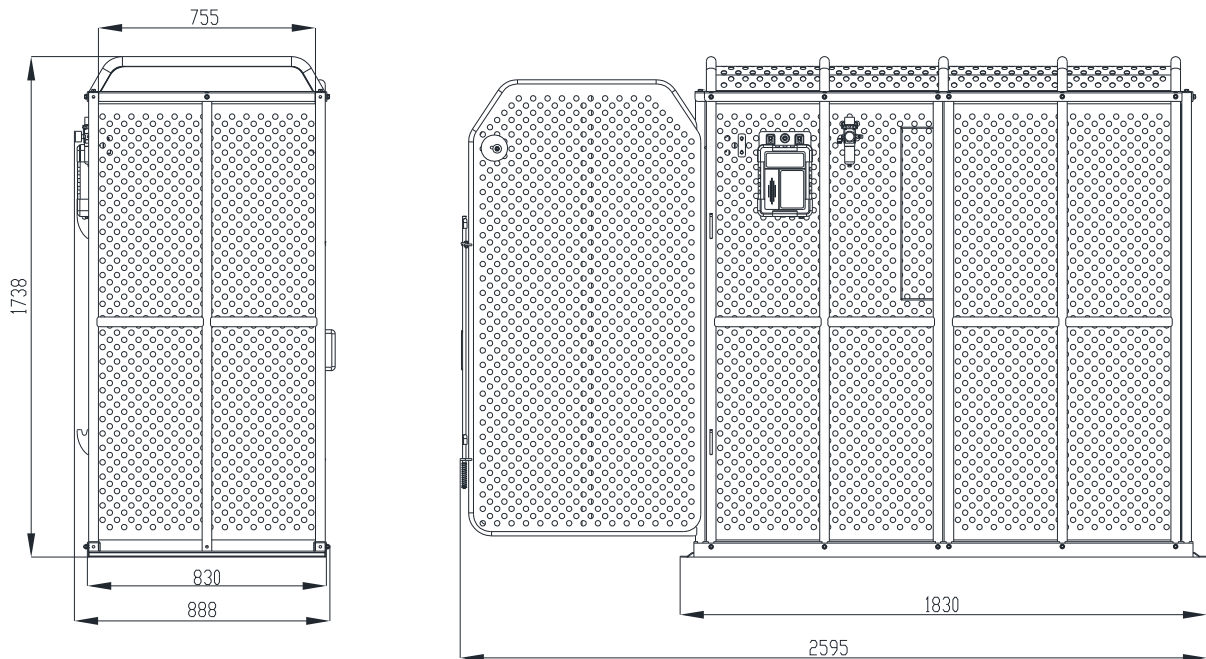


3.3 TECHNICAL SPECIFICATION


Max. tyre diameter	1600 mm (63")
Max. tyre width	800 mm (31.5")
Max. operating pressure for passenger tire	5 bar – 73 PSI
Max. operating pressure for truck tire	7 bar – 100 PSI
Power supply	220V/230V -1PH
Operating temperature	-20° - 70°C
Inflating precision	0.05 bar
Pressure unit	PSI / bar / KPa / kg/cm ²

3.4 SIZE


Figure 3 - SIZE



3.5 SAFETY DEVICES

	<p>It is strictly forbidden to modify any safety device. Always ensure the safety device for proper operation during the service.</p>
---	--

To avoid possible dangers, the following safety devices have been used:

- The intelligent safety device is equipped to avoid a possible over-inflation.
- The tire types can be preset according to the inflating standards.
- The safety valve is equipped for preventing the inflating system from working if the door is not closed properly.
- The error indicator is flashing and the acoustic device is alarming in case of error.
- In case of error, the inflation operation can be stopped by pushing  on the inflator.

CHAPTER 4 - INSTALLATION



**Only skilled technicians must be allowed to carry out installation.
The installation must be made in compliance with the local regulations.**

4.1 CHECKING FOR INSTALLATION SITE

The place of installation must not be next to places where a dangerous situation of explosion can occur. Minimum safety distance 2 meters to wall must be observed. The site must be well and uniformly lit. The cage must be installed on the proper concrete floor having adequate thickness and dully leveled in all directions in conformity with local regulations.

4.2 ANCHORING TO GROUND

- Put the base frame of the cage on the chosen installation site;
- Mark on the floor the hole positions where the holes must be drilled using the holes on the base frame as reference;
- Drill each hole in the concrete about 80mm deep using the rotary hammer with the drill D.10;
- Reposition the base to check it the holes match to each other;
- Fit the supplied anchors M10X80 into the holes and tighten by securing the nuts.

4.3 ASSEMBLY OF CAGE (ref. fig. 4A)

- Assemble the cage as shown;
- Make sure that all bolts are tightened;
- Make sure that the safety valve (13/fig.4A) installation point is free from any object.

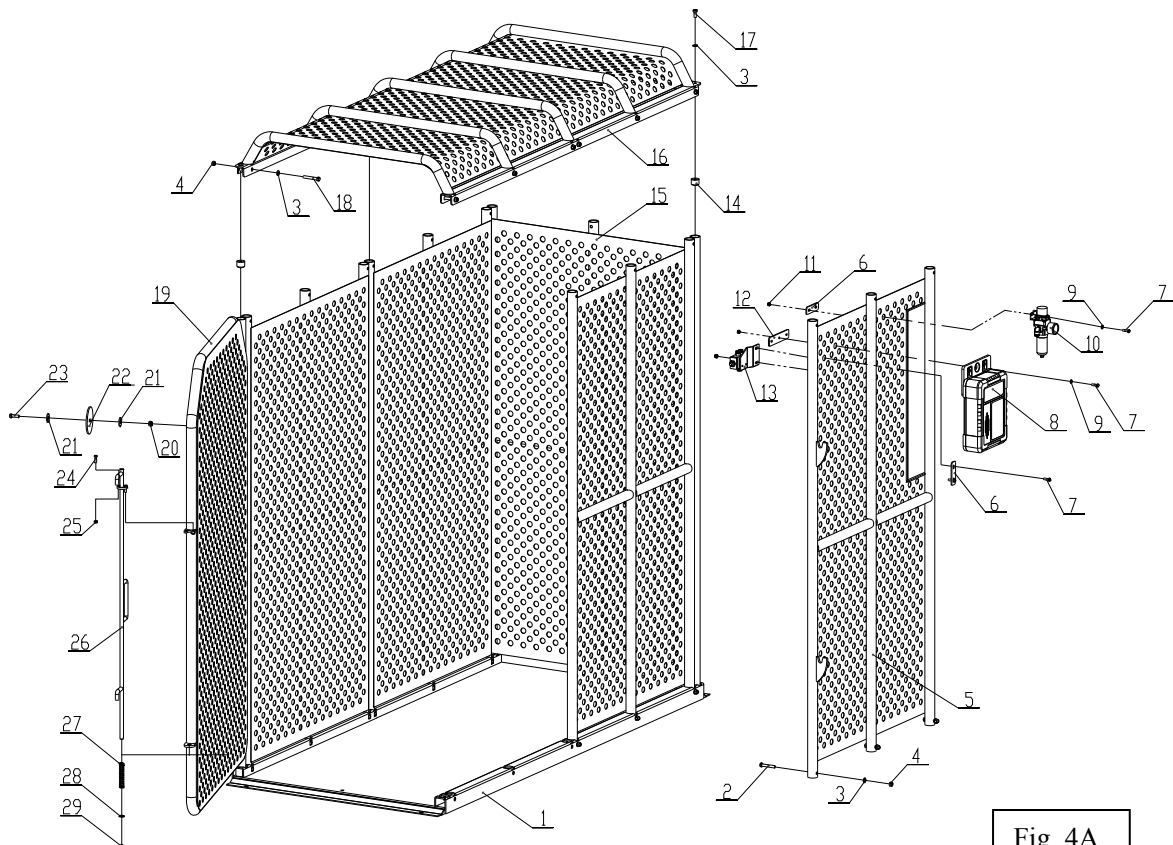


Fig. 4A

Item	Part number	Description	Qty	Item	Part number	Description	Qty
1	C04AQ10000	Cage base frame	1	16	C04AQ50000	Cage cover	1
2	0201021	Screw M8X55	13	17	0201042	Screw M8X20	4
3	0205008	Washer D.8	38	18	0201021	Screw M8X50	12
4	0203029	Nut M8	25	19	C04AQ40000	Cage door	1
5	C04AQ30000	Window barrier	1	20	0204004	Self-locking nut M8	1
6	C04AQ00006	Fastening plate	2	21	C04AQ00007	Washer	2
7	0201014	Screw M6X20	7	22	C04AQ00005	Valve actuating plate	1
8	0508381	Electronic inflator 600	1	23	0201038	Screw M8X25	1
9	0205006	Washer D.6	7	24	0201129	Screw M6X20	2
10	J34AQ00000H	Filer regulator 7bar	1	25	0203004	Nut M6	2
11	0204003	Self-locking nut M6	7	26	C04AQ60000	Door lock latch	1
12	C04AQ00003	Inflator support	1	27	C04AQ00002	Spring	1
13	C04AQ00100	Safety air valve	1	28	0205007	Washer D.6	1
14	C04AQ00001	Pin	4	29	0201114	Screw M6X10	1
15	C04AQ20000	Barrier	4				

4.4 PNEUMATIC AND ELECTRIC CONNECTION (ref. fig.4B)



Make sure that the compressed air must be connected to the inflator through the safety valve to prevent from the unauthorized inflation when the door is not closed properly. Failure to do so can cause a possible injury to the people around the cage.

Make sure that the electric power supply is correct. Manufacturer will not be responsible for damage of the inflator due to the improper electric connection.

- Connect the safety valve to the electronic inflator using the supplied hose;
- Connect the safety valve to the air filter regulator using the supplied hose;
- Prepare a proper hose and connect it to the filer regulator from the air compressor;
- Check to make sure the electric power supply corresponds to the required by the electronic inflator;
- Connect the inflator to the main power using the supplied cable.

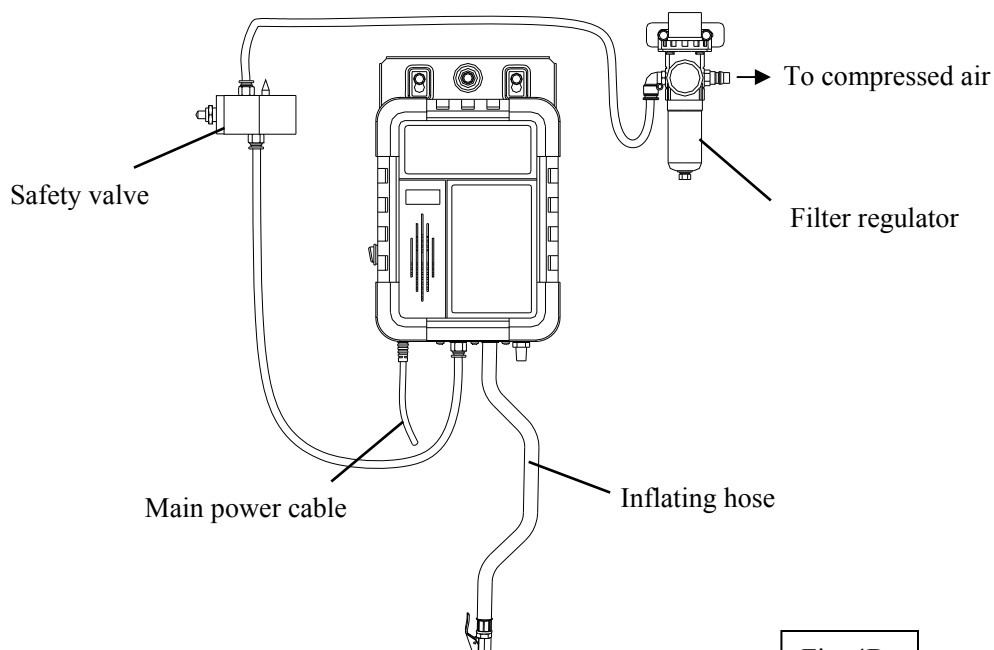


Fig. 4B

CHAPTER 5 – ELECTRONIC INFLATOR

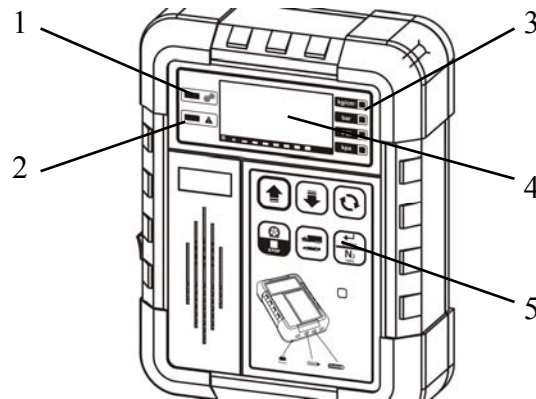


NEVER make the inflating operating until you have read and understood the entire manual provided.

Never get the inflator wet!

5.1 CONTROLS

Figure 5 – DESCRIPTION AND CONTROLS



GREEN INDICATOR (1)

- The inflator is running.

RED INDICATOR (2)

- It is lit when an error happens.

UNIT INDICATOR (3)

- The pressure unit can be set at the unit PSI, bar, Kpa kg/cm². Once the unit is set, the respective indicator is lit.

LED DISPLAY (4)

- It is used to show the readings.

CONTROL KEYS (5)



To increase the value



To reduce the value



To start inflating or stop



To preset the pressure unit.








To choose the tire type CAR/TRUCK or save/exit



To start purity nitrogen inflation or to confirm

5.2 SETUP OF EXPANSION INFLATION COEFFICIENT

This function is designed for inflating the tire, especially new tire that the normal inflation is difficult to seat the beads on the rim very well.

- Power on the inflator with a beep sound;
- press  then  to enter the interface (fig.6);
- Press  to enter the interface (fig.7);
- Referring to the below sheet, press  or  to change the coefficient;


Pressure unit	Initial coefficient	Max. coefficient
Bar	0.1	0.9
PSI	1.45	13.1
KPa	0.1	0.9
Kg/cm ²	0.1	0.9







- Press  to memorize then press  to exit.



5.3 INFLATION

5.3.1 PRESET OF INFLATING PRESSURE

 **Always respect the pressure given by tire manufacturers.
The pressure can be preset before every inflating operation.**

- Power on the inflator with a beep sound;
- Press  to select the pressure unit until the respective unit indicator is lit;
- Press  to choose the tire type to be inflated;
- Press  or  to select the required pressure value.




5.3.2 NORMAL INFLATION

- With the inflator powered on, press  to start inflation;
 - If the pressure in the tire before inflation is higher than 40Kpa, the system starts the automatic inflation until the pressure in the tire is same as the selected pressure;
 - If the pressure in the tire before inflation is lower than 40Kpa, the system starts the pulse inflation at first until the pressure in the tire is higher 40Kpa, then starts inflation automatically. If the pressure in the tire is still lower than 40Kpa after 30 pulse inflations, press  to inflate until the pressure in the tire is higher 40Kpa, then the system is able to start the automatic inflation until the pressure in the tire is same as the selected pressure;
- If the tire is over-inflated, the over-inflation safety device automatically deflates until the pressure in the tire is same as the selected;
- After inflation is finished, “End” and the pressure value are flashing alternatively, in the meantime three beeps can be heard and the green indicator is flashing until the inflating hose is removed from the tire valve;
- After inflation finishes, the interface (8) appears for the next operation.



5.3.3 EXPANSION INFLATION

This function is designed for inflating the tire, especially new tire that the normal inflation is difficult to seat the beads on the rim very well. The setup of expansion coefficient is described in the chapter 5.2.2.

- When the inflator is powered on, press  then  to enter the expansion inflation function. At this time, “diL” and the current pressure value are flashing alternatively;
- Press  to start the expansion inflation;
- After the pressure in the tire is same as the selected pressure plus the expansion coefficient, the inflation stops for about 1 second, and in the meantime “diL” and the current pressure value are flashing alternatively, then the system deflates until the pressure in the tire is same as the selected pressure.



5.3.4 PURITY NITROGEN INFLATION



This operation can only be carried out with a nitrogen generator.







Purity nitrogen inflation is primarily used to increase the tire safety, better pressure retention and increased pressure stability.

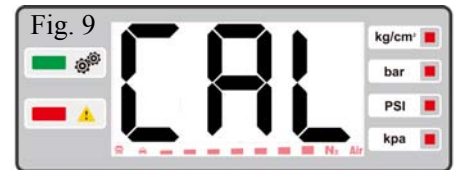
At this function, inflation and deflation takes a few cycles in order to fill more purified nitrogen in the tire.

- With the inflator connected to the nitrogen generator, power on the inflator with a beep sound;
- Press  to enter the purity nitrogen inflation function. At this time, “N2P” and the current pressure value are flashing alternatively;
- Press  to start the purity nitrogen inflation;
- If the pressure in the tire before inflation is less than 40Kpa:
 - the system starts inflation until the pressure in the tire is same as the selected pressure, then starts deflation until the pressure in the tire is less than 40Kpa. During deflation, “F1” and the current pressure value are flashing alternatively;
 - after the above deflation finishes, the system restarts inflation until the pressure in the tire is same as the selected pressure;
 - If the tire is over-inflated, the over-inflation safety device automatically deflates until the pressure in the tire is same as the selected.
- If the pressure in the tire before inflation is higher than 40Kpa:
 - the system starts the first deflation until the pressure in the tire is less than 40Kpa. During this deflation, “F1” and the current pressure value are flashing alternatively;
 - after the first deflation finishes, the system restarts inflation until the pressure in the tire is same as the selected pressure, then starts the second deflation until the pressure in the tire is less than 40Kpa. During this deflation, “F2” and the current pressure value are flashing alternatively;
 - after the second deflation finishes, the system restarts inflation until the pressure in the tire is same as the selected pressure;
 - If the tire is over-inflated, the over-inflation safety device automatically deflates until the pressure in the tire is same as the selected.
- After inflation is finished, “End” and the pressure value are flashing alternatively, in the meantime three beeps can be heard and green indicator is flashing until the inflating hose is removed from the tire valve;
- After inflation finishes, the interface (8) appears for the next operation.

5.4 CALIBRATION

5.4.1 CALIBRATION OF VOLTAGE REFERENCE









- With the inflator powered on, press both  and  to enter the interface (fig.9);
- Press both  and  to enter the interface (fig.10);
- Press  to enter the interface (fig.11). The system will self-check the reference electric power and display the voltage value;
- Press  to memorize and exit.

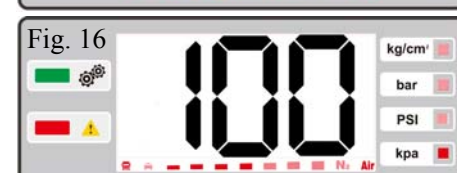
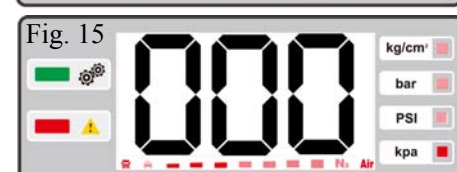








5.4.2 CALIBRATION OF PRESSURE REFERENCE



**A proper air vessel with a well-calibrated manometer must be prepared for this operation.
The pressure unit must be set at KPA for this calibration.**

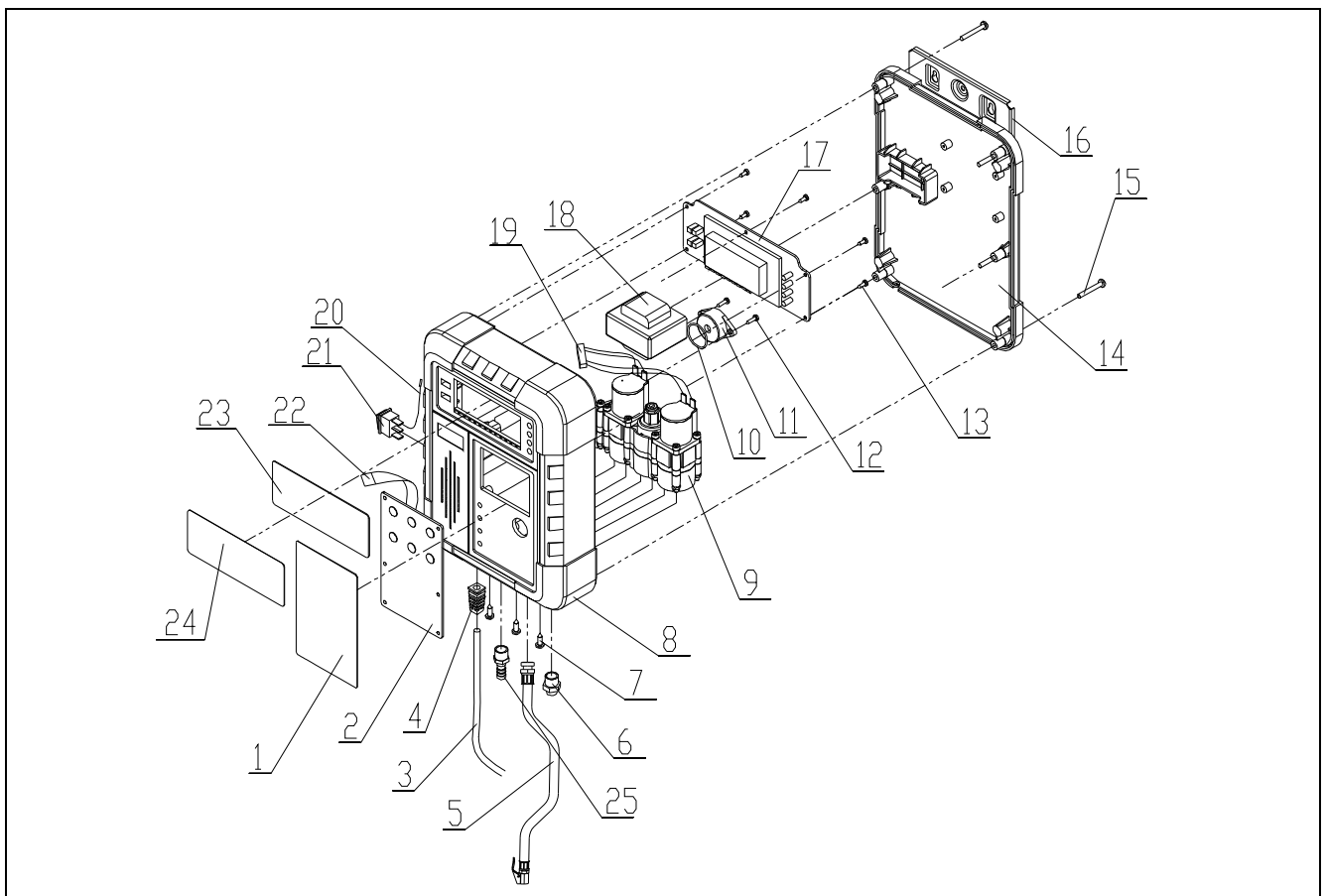
- Inflate the vessel to 500-700Kpa. Make sure the valve of the vessel is closed well;
- Set the interface to the figure 10, press  to enter the interface (fig.11);
- Press  to enter the interface (fig.13) that the system is self-checking the atmosphere air pressure: the indicators on bottom of LED are flashing to show the checking process;
- After the readings are stabilized, press  to enter the interface (fig.14);
- Connect the outlet port of the inflator with a proper hose to the vessel. Make sure to seal the inlet port properly and there is no leakage in the line;
- Open the valve of the vessel: the pressure value is displayed on LED;
- After the readings are stabilized, press  to enter the interface (fig.15)
- Check the readings on the manometer of the vessel;
- Press  or  until the readings are same as that shown on the manometer of the vessel, then press  to enter the interface (fig.16);
- Disconnect the inflator from the vessel until the readings on the manometer of the vessel reaches to about 100KPA, then reconnect: the pressure value is displayed on LED;
- After the readings on LED are stabilized, press  to enter the interface (fig.15) again;



- Check the readings on the manometer of the vessel;
- Press  or  until the readings on LED are same as that shown on the manometer of the vessel, then press  to enter the interface (fig.16) again;
- Check if the readings on both LED and the manometer are same approximately. The reading difference within number 4 is acceptable. If the reading difference is over number 4, press  to exit and remake the calibration;
- Press  to enter the interface (fig.17);
- Press  again to memorize the calibration result.



5.5 INFLATOR PART LIST (fig. 18)



Item	Part number	Description	Item	Part number	Description
1	5.5.1.2	Key mask	14	5.1.2	Casing back cover
2	5.1.3.2.0	Keypad	15	Z.1.3.1.1.4.7	Cross head screw M4X30
3	Y.2.2.14.14	Power cable L=2000	16	5.1.8.1	Inflator bracket
4	Y.2.6.2	Cable relief	17	5.1.3.1.0	LED control board
5	5.1.12.0	Inflation hose L=2500	18	Y.1.9.1.8	Transformer 13VA
6	Q.4.3.2	Silencer	19	5.1.3.6	Valve cable
7	Z.1.3.3.3.1.2	Self-tapping screw M4X12	20	5.1.3.7	Electric wire
8	5.1.1	Casing	21	Y.1.8.1.6	Power switch
9	5.1.5.0	Inflation valve unit	22	Y.2.2.13.4	Key pad cable
10	Z.1.8.1.8.1	O-ring 23.6X1.8	23	5.1.3.3	Indicator mask
11	Y.1.10.5	Beeper	24	5.5.1.1	LED mask
12	Z.1.3.3.1.3.4	Self-tapping screw M3X12	25	0306044	Quick union 8-1/4
13	Z.1.3.3.1.3.5	Self-tapping screw M3X16			

CHAPTER 6 – INFLATING OPERATION



The operator must be trained duly and familiar with the accident prevention directives and the safety instructions given in this manual

The operator must wear anti-noise headset against bursting shocks, goggles against possible fragments, gloves, shoes and safety clothing.

6.1 PRE-CHECK

- Check to make sure that the cage is anchored to ground properly;
- Check to make sure that the cage is in the good condition and all bolts are tightened well;
- Check to make sure that the electric power supply corresponds to the required by the electronic inflator;
- Check to make sure that the pneumatic line is connected properly, especially the safety valve is installed properly;
- Check to make sure that the tire to be inflated has no defects and all balancing weights are removed;
- Check to make sure no people and an object inside the cage or around the safety area (at least 2 meters around the cage) during the inflation.

6.2 INFLATION



Always respect the pressure given by the tire manufacturer.

During inflation, keep the tire under the visual control and stop the inflation immediately in case that any anomaly occurs.

Before moving the tire out of the cage, have a visual check of its condition and deflate it immediately in case of anomalies or doubts on its safety level.

Before moving the tire out of the cage, make sure that the inflation has been finished. Make sure that the green LED indicator stops flashing and acoustic device stops alarming.

- Open the cage door and move the tire inside;
- Connect the inflating head to the tire valve;
- Close the cage door and make sure it is brought to the limit stop;
- Latch the cage door properly;
- Refer to the instructions described in the chapter 5.3, select the required pressure then make the inflation operation refer to the instructions in the chapter;
- Once the inflation finishes, open the cage door and disconnect the inflating head from the tire valve;
- Move the inflated tire out of the cage.

CHAPTER 7 – MAINTENANCE

7.1 GENERAL WARNINGS



Unauthorized personnel may not carry out maintenance work.

- Regular maintenance as described in the manual is essential for correct operation and long lifetime of the cage.
- If maintenance is not carried out regularly, the operation and reliability of the cage may be compromised.



Before carrying out any maintenance work, disconnect the power supplies.



Do not clean the cage with jet of water.

- Defective parts must be replaced exclusively by expert personnel using the manufacturer's parts.
- Removing or tampering with safety devices is extremely forbidden.



In particular, the Manufacturer shall not be held responsible for complaints deriving from the use of spare parts made by other manufacturers or for damage caused by tampering or removal of safety systems.

7.2 ORDINARY MAINTENANCE

- Check all bolts are for proper tightening;
- Grease hinges and doo bolts at least one month;
- Check the pneumatic hoses for leakage;
- Clean the cage using self-cleaning clothes
- Keep the working area cleaned;



When the cage is used for 5 years at least, the cage must be reviewed in its entirety.

CHAPTER 8 – TROUBLE-SHOOTING

During operation, various cause of faulty operation can occur.

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
Not possible to inflate by means of the electronic inflator	Electric power is off.	Check and make the electric connection correctly.
	Door is open.	Close the door and latch it properly.
	Error messages on LED display.	Check the causes about errors described below.
	Missing connection of compressed air.	1) Check the availability of the compressed air as well as the fittings and hoses. 2) Check both tire and inflating hoses. 3) Check the availability of safety valve.

The red indicator is flashing and the acoustic device is alarming in case that an error is displayed on LED.

ERRORS:	POSSIBLE CAUSE:	SOLUTION:
Er 1	Missing connection of compressed air.	1) Check the availability of the compressed air as well as the fittings and hoses. 2) Check the leakage for both tire and inflating hoses. 3) Check the availability of safety valve.
Er 2	Attempt to inflate a tire with too high or too small pressure.	Check and select the pressure correctly.
Er 3	Selected pressure is higher than the compressed air.	Check and select the pressure correctly.
Er 5	Wrong calibration of pressure reference.	Calibrate correctly.