

PART NUMBER	
SERIAL NUMBER	



N72 Nitrogen Mobile Unit Inflator User Manual

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for safety and to prevent equipment problems. To help recognise this information, observe the following symbols.



Danger indicates an imminently hazardous situation which if not avoided **WILL** result in death or serious injury.



Warning indicates a potentially hazardous situation which if not avoided, **COULD** result in death or serious injury.



Caution indicates a potentially minor or moderate injury.



Notice indicates important information, that if not followed, may cause damage to equipment.

Unpacking

After unpacking the unit, inspect carefully for any damage that may have occurred during transit.



Do not operate unit if damaged during shipping, handling or use.

General Safety Information

The operator of this product must take the necessary precautions to prevent the level of danger indicated by these symbols. The operator is required to read and understand this instruction manual and all safety warnings, labels etc.

Any employer allowing the use of this product in their field of work must distribute this instruction manual to all users. The employer must also ensure all users read, understand and follow the instructions as described in the manual, safety warnings, labels, etc.



Read and understand all safety warnings and instructions before operating this product. Failure to read and follow all safety warnings may result in serious personnel injury or death. Property damage and/or product damage may also occur if all warnings are not followed.



Purchased Nitrogen Cart may not be representative of the image shown

1. Do not expose the product to flammable gases, vapours or fumes
2. Do not store flammable gases in or near this product
3. Never use flammable or toxic solvents to clean the product or any of the unit's parts
4. Never remove or alter any safety warning labels, tags, etc. located or provided with product.
5. Follow all directions for maintenance.



The use of other than genuine PCL replacement parts may result in reduced equipment performance. Repairs must be performed by authorised repair personnel, otherwise the warranty will be void.

General Specifications

N72 Variant	Max Inlet Supply	Recommended Supply	Max Inflation Pressure	Min Inflation Pressure	Display Resolution	Units of Measurement	Electrical Supply
N72	188.5psi/13bar/1300kPa	14.5psi/1bar/100 kPa above max set pressure of	174psi/12bar/ 1200kPa	4psi/0.3bar/ 30kPa	1psi /0.1bar/ 10kPa	psi/bar/kPa	90 V a.c. to 240 V a.c. Battery Charger. Control Head 12 V d.c.

Guidelines

In order to provide a trouble free operation it is necessary to connect the power supply from the main switchboard with a MAX 3amp fuse/RCD protection device.

The circuit breaker should be marked as the disconnecting device for the equipment.

The compressor producing the air should have the necessary water and dirt filtration, to minimise accumulation of debris at the inflator line filter strainer. There must be no oil mist in the air inlet line.

For efficient tyre inflation, ensure that the air supply is 14.5 psi, 1 bar or 100kpa above the intended maximum inflation range.

Inside installations

Use 3 pin connecting plugs or 2 pin + Earth with the Earth Ground wire installed on electrical infrastructure.

The unit is designed to run with the earth connection installed. "According to Class 1 - Basic insulation in conjunction with protective Earthing"

Calibration & Accuracy

The accuracy of our digital units when released from our factory is that:-

The maximum permissible error (MPE) = 0.08 bar

Each unit, before release, is checked and calibrated on test equipment that has accuracy traceable to a UKAS Laboratory No. 0221 referenced to certificate 0029346.

Pre-use installation elements

Before unpacking of the unit please note the unit is screwed down to the pallet. Remove 3 screws holding the unit to the pallet.

NOTE: the unit is heavy, 2 man lift required.

Ensure the hose(s) are connected to the output port(s). The unit will need charging up before first use.

The unit is supplied with either:
UK & EU power leads (as standard), or
US power lead (customer specified variant) supplied with 120V US plug.



Flat tyre conditions: standard inflation and nitrogen cycle

For tyres below 5 psig or 0.3 bar, press the start button to enter a standard inflation or press N2 button to enter a nitrogen purge cycle.

Note: When initiating a nitrogen cycle under flat tyre conditions there will only be **ONE** N2 purge rather than the standard **TWO** N2 purges.

The one purge under this condition will give the same N2 purity as a standard cycle.

Observation: If you accept a N2 purge under a flat tyre condition the tyres will inflate to default set pressure then deflate to around 10% of this value then back up to the default pressure. Once default pressure is reached the alarm sounds and end flashes on the LCD display and then follow standard completion procedure stated earlier.



Emergency Stop

Stop the inflation / deflation cycles by pressing any button on the front panel or by turning the Nitrogen valve from FILL to STOP.




Adjustment of Pressure Units



Switch on N72 and press either  or  when PCL is shown on display.

Display will show NPC, press  button until display shows END, press 


Display will show L0, press  button until display shows L6 (List 6)



At L6, press  button to access Level Contents (L6)

Display will show P10, press  button to enter P10.

Use the  or  buttons to select desired pressure unit (Bar, psi, kPa or kg/cm²).

Once selected press  to save the setting.

Display will show P10, press  button once so displays shows P11. Press  to access P11.

Use the  or  buttons to select desired pressure unit (Bar, psi, kPa or kg/cm²).

Once selected press  to save the setting.

Display will show P11, now press  twice to exit the parameters and allow the unit to restart with amended settings.

Adjustment of N2 Purge Parameters

To adjust N2 purge parameters
 Number of Purge Cycles NPC
 Over Pressure Limit OPS
 Lower Pressure Limit LPL

NOTICE

These can be adjusted if required by the operator by:-

Turn off the power and power on.
 The display scrolls through the following:
 LCD Check

Software Version—i.e. 3.2.3
 Software Variant—i.e. 366

'PCL'

When PCL is shown press 'Start' or 'N2' button.
 The screen will then show 'NPC'.

This is the first of the four parameter settings. These parameters may be scrolled up and down to view by pressing the + or - buttons. The three parameters are fully defined in (1) Parameters. To access any of the parameters, press start, this will open up the parameter contents, adjust values using the (+/-) buttons and save value chosen by pressing the start button. To exit out of any parameter press the N2 button once, this will return you to the set default press.

The default setting for N2 control is contained within the microprocessor as follows:

Parameters

	Definition	PCL standard settings
NPC	Number of purge cycles	2
OPS	Over pressure setting	0 psig/bar or set pressure
LPL	Lower pressure limit	10 % of target pressure

NPC is adjustable between 1 and 5 cycles = increase cycles to improve N2 tyre purity. For higher tyre pressures (when the desired inflation pressure is above 60psi/4.1bar) you only require 1 purge as standard to achieve an acceptable purity level while increasing inflation times.

OPS is adjustable between 0 and 29 psig/2.00 bar = allows the inflation pressure to go beyond the set pressure by the value assigned, this may be used to compensate for a reduced number of N2 cycles .

LPL is adjustable between 10% to 50% and represents lower limit for purging. For tyres with higher set pressures the low pressure threshold can be increased to reduce time, and can be coupled with an increased number of N2 cycles.

Unit usage monitoring

Hours of N2 cycling	PSH
Numbers of complete N2 cycles	CNP
Number of top-offs	CNT

These can be adjusted if required by the operator by:-

Pressing + and - buttons simultaneously (long beep can be heard)

The screen at this stage should display CNT. This is the first of the three monitoring settings. These settings may be scrolled up and down to view by pressing the + or - buttons.

CNT shows the number of N2 top off's which have been completed.

CNP shows the number of complete N2 purge cycles completed.

PSH shows the number of hours of operation of N2 generation.

To exit from the monitoring options simply leave the screen buttons untouched for 20 seconds.

Battery Charging

It will take 3 hours from flat to full battery storage.

Charger LED Status:

Orange—Fast Charge

Yellow—Top Off 90% Full

Green—Fully charged with trickle charge

Approximate hours from full charge of Continual Tyre Inflation and Deflation = 24 hours.

Approximate hours of Continuous Machine Idle Time = 140 hours.

Do Not leave battery in an uncharged state as this will irreparably damage the battery!

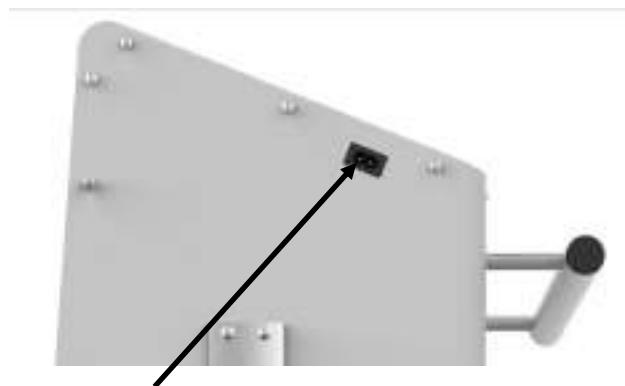
System set-up instructions

1. Connect to air supply by screwing your chosen adaptor to the Rp 1/4 fitting (1/4 NPT for US versions) into the compressed air inlet port of the Filter Unit. Then connect your air supply coupling end to the adaptor.

2. Connect the mains power lead to the C7 socket on the side of the unit. The LED will change colour to 'Green' when the unit is fully charged. This will take 3 hours from a flat battery.

3. Turn on/off switch to the 'on' position shown.

Air Inlet Port (Rp1/4 standard, 1/4 NPT on request)



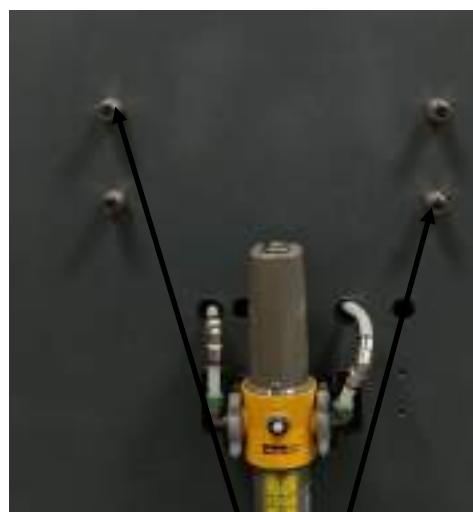
Battery Charger a.c. Input Port



Battery Charge Indicator Dial

On-Off Switch

Battery Charge Status LED



Hose Outlet Ports (x4)

Operation

1. Firmly attach the output tyre hoses to the target tyres and ensure that leaks do not exist.
2. Set the Tyre pressure with the + and – buttons on the front panel.



3. Turn the Nitrogen valve to FILL



4. Press the START button for standard inflation (top-up) or press N2 for Nitrogen Conversion (purge) cycle.



5. When the alarm sounds and END flashes on the LCD screen the N2 purge cycle is complete.
6. Turn the Nitrogen valve to stop and allow a minimum of 10 seconds before the tyre hoses are removed. This will balance any pressure differentials in the tyre to the correct pressure.



7. Remove and store the output hoses.



To set different pressures for front and rear tyres

1. Firstly convert all 4 tyres to the higher or lower set pressure you require using the standard operating procedure.
2. Disconnect the 2 tyres that are at their final pressure. Ensure that the 2 disconnected closed end hoses are not leaking!
3. Ensure that the Nitrogen Valve is set to STOP.
4. Set the final required pressure for the remaining 2 tyres, Use the (+ or -) buttons to set your required pressure.
5. Once you have set the desired pressure place the nitrogen inflation valve to FILL.
6. Press START button to inflate or deflate the tyres final pressure
7. When the alarm sounds and Display shows END filling process is complete.
8. Ensure Nitrogen inflation valve is set to OFF and Power switch to off.
9. Remove and store the output hoses.

Never exceed the tyre pressure recommended for the vehicle or as defined on the tyre sidewall.

For inspection and checking of the actual tyre pressure:

1. Simultaneously depress + and - keys together (long sound tone will be heard), then press the start button 5 times
2. Tyre pressure will now display pressure resolution to 0.01 bar. User may then compare pressure accuracy to test apparatus (Note: Unit will not function as tyre inflator)
3. By pressing any button, the unit will resume to normal screen operation.

Calibration & Accuracy

The accuracy of our digital units when released from our factory is that:-

The maximum permissible error (MPE) = 0.08 bar.

Service / Maintenance

There is no requirement to service the following items:

1. Pressure Transducer
2. Electric Control Board



If these are faulty they can only be replaced by a competent person. Please refer to an Authorised dealer.

Periodically

- Check the hoses.
- Check the tyre connector.
- Remove air input supply and tyre hose from the head.
- Check the Filter Indicator and replace filters if required.

Working safety instructions

Since the unit is not explosion-proof, the device should not be installed in areas where explosions are possible. Consideration must be given to the requirements relative to Hazardous Area Standards for your region or country.

The unit is designed and built to the relevant basic health and safety requirements of the EC.



This product can be dangerous if used improperly. Children should not be allowed to use this equipment, as incorrect setting can allow tyre to be over inflated and a subsequent tyre burst/explosion can occur!

Each person who is involved with installation, start-up, maintenance and the operation of the unit must read and understand the complete operating manual.

The PCL tyre inflators are exclusively approved for the dispensing of air/N₂. Each use which doesn't follow this purpose as well as modifications to the product will be deemed to be improper use. The manufacturer is not liable for damages caused by improper use, the risk lies solely with the user.



Proper use of the product also implies the observance of the manufacturers instructions with regard to installation, start-up, operation and maintenance.



All works concerning installation, start-up, adjustment and maintenance must be made by qualified staff. For the operation of this tyre pressure inflator the local safety and accident prevention rules must be observed in all cases.



High Pressure air is stored within the system.



Do not exceed the maximum air input pressure.



Do not operate this product if tired or under the influence of medication, drugs or alcohol.



To avoid the risk of personal injury, especially to the eyes, face or skin DO NOT direct the air/N₂ stream at any person.

Instructions for changing the filter elements on the integral Domnick Hunter filters.

When the white indicator 'spot' on the front window inside the unit turns blue the filter elements need replacing. The average lifespan of the filter elements is 600 working hours.

Filter Change Indicator



NOTICE

If the filter elements are not replaced when the indicator turns blue then the membrane system is liable to be damaged.

NOTICE

Depending on the amount of ozone and moisture coming from the compressor this lifespan can increase or decrease.



WARNING

Ensure air connection to the generator unit has been removed or shut off before attempting to remove filter bowls.

1. Unscrew the top bowl by screwing the top half of the housing anti-clockwise until the bowl can be removed.

Removed bowl and internal filter element



2. Inside the top half bowl should be the ozone filter which is black in colour. This can simply be pulled out with a small amount of pressure.



First stage filter element (N2S43)

3. Replace this with a new filter (part number: N2S43)
4. Screw the top bowl back into position, ensuring the bowl has clicked into place in the main housing.
5. Repeat the above process for the lower bowl, this contains the secondary oil mist and moisture filter (part number: N2S42).



Second stage filter element (N2S42)

6. When replacing the bowls you must ensure they are screwed back in properly, with the two symbols aligning against the body of the filter as seen in the images below.



Unit view



Filter Indicator

Battery Voltage Indicator

LCD Display

Stop-Fill Valve

On/Off Switch

Hose Hooks

Charge Status LED



Nitrogen Purity Test Point

Handle

Output Hoses (x4)

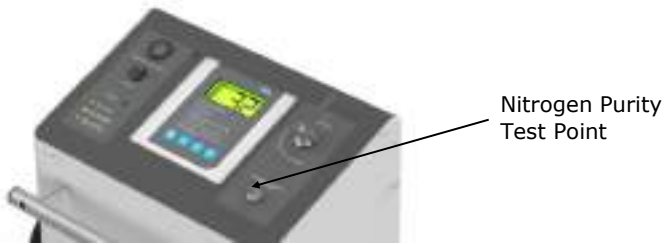
Charger Cable Tray

125mm castors



Nitrogen Purity Test Port

This is located on the top of the unit below the FILL lever, and is designed to identify the purity of Nitrogen being produced by the machine. To identify the purity of Nitrogen being produced ensure the unit is turned on then remove the valve cap and push the connector on a PCL Nitrogen Analyser unit (N2A001) which will automatically give you a purity readout.



How to replace Battery Charger (Part No. SPR4400).

1. Remove Rear Cover.
2. Disconnect Battery leads.
3. Disconnect Battery Charger leads from quick clip connectors.
4. Remove 4 off M5 Nuts retaining battery charger cage.
5. Discard old charger noting local WEEE regulations.
6. Refitting is the reverse of the removal method. (Ensure the charger is mounted the correct way round allowing the LED to be seen through the control panel and the mains connector is visible through the opening in the side of the unit).

How to replace Battery 7 Amp Hour, 12 V d.c., Lead Acid (Part No. SPR4500).

1. Remove Rear Cover.
2. Disconnect Battery leads.
3. Remove 4 off M5 Nuts retaining battery cage.
4. Discard old battery noting local WEEE regulations.
5. Refitting is the reverse of the removal method. (Ensure the battery is mounted the correct way round with the terminals towards the side of the unit and the black and red wires are connected to the correct terminals).

Available Spares

Part No.	Description		Part No.	Description	
C08U73	Tyre Chuck		N2S47	Filter Warning Plug	
DS68	Hose Assembly		DS210	Air Inlet Solenoid	
SPR4500	Battery 7 Ah, 12 V d.c.		DS158	Control Head Solenoid & Sensor Assembly	
SPR4400	Battery Charger		DS40	Control Head Buzzer	
N2S45 (for N72SAIC24)	Filter 1st Stage		DSQ03/366	Control Head Main Card PCBA	
N2S43 (for N72SAIC34)					
N2S44 (for N72SAIC24)	Filter 2nd Stage				
N2S42 (for N72SAIC34)					

Trouble Shooting Guide/Error Messages

Problem	Possible Cause	Solution
No display	No power connected	Switch power on
No inflation process	Tyre is below 3 psi Faulty connector	Press start button Replace faulty connector
Buzzer does not sound	Buzzer volume has been turned off Buzzer is damaged	Turn buzzer on Replace buzzer
Inflation process starts but does not complete	Low or no supply pressure Leaks exist	Check supply pressure Confirm leaks do not exist
Supply pressure leaks out input	Input and tyre hoses are incorrectly reversed	Ensure input connection is to offset port, tyre connection is central between input and exhaust
Inflating or deflating is very slow	Check that mesh filters under input and output port fittings are blocked	Clean and or replace mesh filters
Connector will not seal to the tyre stems	Connector worn	Replace connector
Connector leak while not connected to tyres	Connector worn	Replace connector
E1	Unstable or insufficient supply pressure	Check the supply pressure
E4	Small volume, caused inflator to check pressure > 2bar / 29psi over target pressure	Check hose is not kinked or blocked, ensure a OPEN END connector is installed
E5	Inflator started under pressure i.e. is connected to tyre or a CLOSED END connector is being used	Remove hose from tyre and allow inflator to reset Change connector to OPEN END type
E6	Pressure sensor drift out	New sensor required - Refer to authorised repairer
E8	Pressure sensor disconnected from PCB or faulty	New sensor required - Refer to authorised repairer
E9	Pressure sensor failure - high	New sensor required - Refer to authorised repairer
E10	Under voltage	Check power supply
E11	Over voltage	Check power supply - Refer to authorised repairer
E12	Checksum corrupted	New PCB required - Refer to authorised repairer
E13	Lost or corrupted calibration settings	New PCB required - Refer to authorised repairer
E14	Count issue	New PCB required - Refer to authorised repairer
E17	Calibration settings corrupt	Recalibrate unit - Refer to authorised repairer
E18	Runtime error	New PCB required - Refer to authorised repairer
E19	Touch screen error	New PCB required - Refer to authorised repairer
E20 - E23	Start-up sequence error(s)	New PCB required - Refer to authorised repairer
E24	Membrane count/run hours error	New PCB required - Refer to authorised repairer
E25	N2 count/run hours error	New PCB required - Refer to authorised repairer
E28	Signature mismatch / PCB error	New PCB required - Refer to authorised repairer

PCL LIMITED WARRANTY

PCL warrants the components of each unit to which this Limited Warranty applies against defects in materials and workmanship for a period of twelve (12) months from date of sale (as evidenced by bill of sale or equivalent) or for a period of eighteen (18) months from date of shipment from PCL manufacturing facility (identifiable by the serial number and noted on original bill of lading from the manufacturing facility), whichever period is shorter. During this warranty period and subject to the conditions set forth in this statement, PCL will, at its option, repair or replace component parts that were defective at the time of shipment from PCL manufacturing facility, subject, however, to the following specific EXCLUSIONS: hoses and connections.

Repair or replacement will not extend the warranty period.

Customer must give PCL timely notice of any warranty claim by contacting an authorized PCL service centre. Claims must be accompanied by (1) evidence, by a bill of sale or equivalent, which clearly establishes date of purchase of the unit and (2) the serial number, found on the unit. Customers must properly pack parts in their original or equivalent packaging, prepay shipping charges, and insure the shipment or accept the risk for loss or damage in shipment. Return shipment to customer will be freight collect unless otherwise agreed. For service at a customers location, customer will be charged the then prevailing service rates.

The Limited Warranty applies to PCL manufactured units only. Items listed in the applicable operators manual under routine maintenance are not covered by this or any other warranty. Failure to complete maintenance as stated in any applicable maintenance schedule will void the Limited Warranty. The Limited Warranty is expressly conditioned upon proper and normal use and service of the unit and upon strict compliance by customer with all of PCL instructions and recommendations for installation, operation and maintenance. The Limited Warranty does not apply to the unit or parts that are damaged or become defective due to improper handling, maintenance, storage, use, or operation, and does not cover ordinary wear and tear, corrosion, or erosion.

THE LIMITED WARRANTY SET FORTH IN THIS STATEMENT CONSTITUTES PCL'S SOLE WARRANTY FOR THE UNIT AND THE REMEDIES SET FORTH HEREIN CONSTITUTE CUSTOMERS SOLE REMEDIES FOR BREACH OF WARRANTY. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, IN FACT OR BY LAW, INCLUDING WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Determination of the suitability of the unit for the use contemplated by the customer is the sole responsibility of the customer. PCL shall not, under any circumstances, be liable in contract, tort or otherwise (including negligence and strict liability) for indirect, special, incidental, or consequential damages, and PCL's total liability shall not exceed the net purchase price for the unit. PCL shall be excused for delay or inability to perform obligations due to events beyond its reasonable control.



CUT HERE

Warranty Registration

Please complete and mail this form to activate warranty
Or visit us at www.pclairtechnology.com

Mail to:

Warranty Department
PCL
Holbrook Rise
Holbrook Industrial Estate
Sheffield
S20 3GE
United Kingdom

Name _____ Title _____

Company Name _____

Type of Business _____

Address _____

City _____ County _____ Post Code _____

Telephone _____

Part Number _____ Serial No _____

Purchased From _____

Purchase Date _____

Calibration Certificate

Each unit, before release, is checked and calibrated on test equipment that has accuracy traceable to Druck pressure indicator S/N2329290.


The Druck unit is referenced to Certificate 0029346 issued by UKAS Laboratory No. 0221.
This accuracy exceeds and BS EN 12645:2014 (MPE = 0.08 bar).

READING	SET PRESSURE			ACTUAL PRESSURE
1	BAR	PSI	KPA	
2	BAR	PSI	KPA	
PURITY				

PART NUMBER	
SERIAL NUMBER	
TESTED BY	
DATE	

Declaration of conformity

- **Note** : The declaration of conformity is valid for units operating at 230V/50Hz.
- 2014/30/EU (EMC directive) confirmed by report No. TRA-034746-36-02A
- 2014/35/EU (LOW Voltage Directive).
- National regulations EN12645 : 2014, French National Approval LNE-3345—Rev 0, report no. LNE-33471—Rev 0 and Portugal Approval (IPQ) report no. 245.30.17.3.18



Mark McCaughey
Technical Director on behalf of PCL