Operating instructions

Original edition

Model No.: 235-0008

Champ Neo – Dry ice blasting machine

Table of Contents

1 Overview

1.1 Structure and function

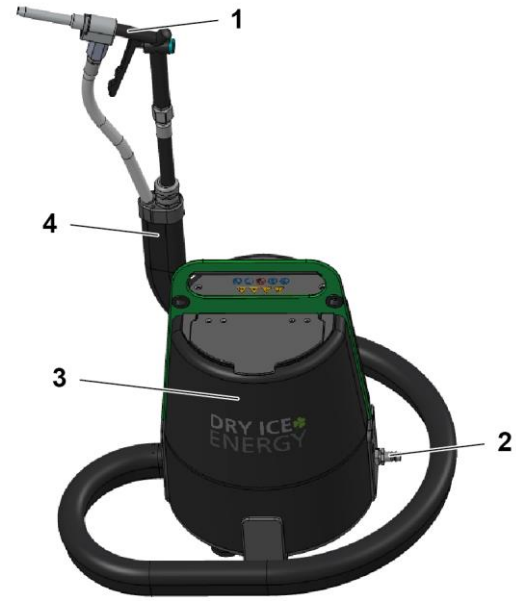

Fig.: Structure

No.	Element
1	Blasting gun with nozzle
2	Compressed air connection coupling plug NW 7,2
3	Housing with ESD feet and handle Vibrating tank with suction tube and cover plate
4	Air hose and ice hose in one protective hose

The Camp Neo is a dry ice blasting machine that has been specially developed for cleaning by dry ice blasting. It complies with the requirements of the Product Safety Act (PSG) 2021, the Machinery Directive 2006/32/EC and the DGUV guidelines.

2 General information

Thank you very much for choosing our Champ Neo dry ice blasting machine!
Before using the blasting machine, please first familiarize yourself with the device and read the operating instructions. In this way, you avoid dangers for yourself and others.
You will receive the operating instructions as a PDF when you ship the dry ice blasting machine. You should always have them at hand. Keep this instruction manual so that it is available to the operator at all times.
The operating instructions explain the installation, operation, mode of operation and maintenance of the Champ Neo dry ice blasting machine and the technology of CO2 purification.
Only persons who have read and understood the operating instructions may use the device. In particular, all safety instructions must be observed.
One of the principles of Dry-Ice-Energy GmbH is to continuously develop and improve the product ranges, which explains any differences in equipment, technical data, brochures and operating instructions.
Descriptions of activities that do not require any special knowledge have been dispensed with.
Repair work that exceeds normal maintenance work is not described and may only be carried out by the service of Dry-Ice-Energy GmbH or an authorized service partner.
The device is built according to recognized safety standards. Improper use can result in dangers for the user.

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Disclaimer

The manufacturer disclaims any liability or responsibility for consequential, incidental or indirect damage resulting from failure to comply with this documentation, improper handling, repairs by unauthorized professionals, installation and replacement of non-original parts, and improper use.

All information and information in this documentation has been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience.

Patent protection

Language

The original manual was created in German. All translations are based on the language of the original manual

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Sales

Service

read carefully before use.
Store for future reference.

3 Security

3.1 Allgemeine Information

This document contains important information on the safe handling of the dry ice blasting machine.
The regulations of the respective country apply to the blasting of surfaces when using granular abrasives.
In Germany, the employers' liability insurance association regulations apply.
When operating the device, the relevant accident prevention regulations must be observed, in particular DGUV **Regulation 26 "Compressed Air" (formerly BGV D 26)** and the general occupational health and safety regulations.
Other regulations are:

- DGUV Rule 112-195 – Use of protective gloves:
  Suitable protective gloves must be worn when operating the device. It the requirements of **DGUV Rule 112-195 "Use of protective gloves" (formerly BGR 195).**

- DGUV Rule 112-189 – Use of protective clothing:
  The operator must wear appropriate protective clothing. The following apply: provisions of DGUV **Rule 112-189 "Use of protective clothing" (formerly BGR 189).**

- **DGUV Rule 113-004 – Working in containers, silos and confined spaces:**
  When working in confined spaces, containers or poorly ventilated areas the requirements of **DGUV Rule 113-004 "Working in containers, silos and confined spaces" (formerly BGR 117 / BGI 534).**

- DGUV Information 213-056 – Gas warning devices:
  When using the device in closed or poorly ventilated
  The use of suitable gas warning devices is recommended. It is the information in **DGUV Information 213-056 "Gas warning devices" (formerly BGI 836).**

3.2 Symbol explanation

3.2.1 Safety instructions

Are identified by symbols in this operating manual. The safety instructions are introduced by signal words that express the extent of the hazard.

⚠ DANGER

This combination of symbol and signal word indicates an imminent dangerous situation that will lead to death or serious injury if not avoided.

⚠ WARNING

This combination of symbol and signal word indicates a potentially dangerous situation that could lead to death or serious injury if not avoided.

⚠ CAUTION

This combination of symbol and signal word indicates a potentially dangerous situation that can result in minor or minor injury if not avoided.

NOTE!

This combination of symbol and signal word indicates a potentially dangerous situation that can lead to property damage and environmental damage if not avoided.

3.3 Intended use

The device is used exclusively for cleaning by means of dry ice blasting.

Any other use is prohibited and may result in damage or safety risks.

3.3.1 Foreseeable misuse

The system is intended exclusively for the use of dry ice pellets with a diameter of 1.5 to 3 mm.
The compressed air supply must meet the requirements, free of solid particles, oil and condensate. Ideal white min. 5bar at 250 l/min.
Using the system at room temperatures below freezing can cause increased problems due to freezing condensate.

3.4 Fundamental dangers

The dry ice blaster may only be set up, adjusted, operated, maintained or repaired by qualified, trained and instructed operators.

A damaged or improperly functioning dry ice blaster must not be used.

All safety instructions and warnings must be read and understood in full before setting up, operating, repairing, servicing, replacing accessories and working in the hazardous area of the machine.

Failure to follow the safety and warning instructions may result in serious injury or death.

3.5 Danger to life due to carbon dioxide (CO_2) – risk of suffocation

Dry ice consists of solid carbon dioxide (CO_2).
During operation, the dry ice sublimates (transition from solid to gaseous) and releases large amounts of CO_2 in the process.

CO_2 is colorless and odorless and displaces oxygen.
There is an acute risk of suffocation, especially in enclosed or poorly ventilated rooms (e.g. basements, vehicles, cold rooms).

CO_2 is heavier than air and can accumulate close to the ground.

Possible health effects

- 3–5% CO_2: headache, increased respiratory rate
- 7–10% CO_2: Severe headache, nausea, dizziness, loss of consciousness
- >10% CO_2: Danger to life

Safety measures

- Ventilate the workplace sufficiently and continuously
- When working in confined spaces:
    - Ensure forced ventilation
    - or install extraction close to the floor
    - Use a personal warning device (CO_2 warning device)
- Do not operate the appliance in unventilated rooms
- If there is insufficient ventilation, use a suitable breathing apparatus

What to do in the event of danger

If there are signs of increased CO_2 concentration:

- Turn off the device immediately
- Leave the work area immediately
- Get out into the fresh air

- Do not resume work until you:
  - sufficient ventilation is ensured
  - or appropriate protective measures have been taken

3.6 Danger from compressed air

Compressed air can cause serious to fatal injuries.

Safety measures

Before downtime, accessory replacement, maintenance or repair:

- Close compressed air supply
- Depressurizing the air hose
- Completely disconnect dry ice blasters from the compressed air supply
- Never direct airflow at yourself or other people
- Avoid flapping hoses
  - Check hoses and fasteners before each use
  - Replace damaged or loosened hoses immediately
- Keep cold exhaust air away from hands and body
- Do not exceed the maximum permissible operating pressure of 10 bar
- Never carry the machine by the compressed air hose
- Protect compressed air hose from heat, oil and sharp edges
- Check the hose before each commissioning

Compressed air supply

The dry ice blaster may only be connected to compressed air lines where:

- Exceeding the maximum permissible pressure of 10 bar is reliably prevented
- e.g. by pressure control valve (pressure reducer) with downstream or integrated pressure relief valve
- Operation exclusively with one compressor
  - Operation with oxygen or flammable gases is prohibited

Hazard warning

The use of oxygen or flammable gases can lead to fire, explosions and serious injuries.

3.7 Dangers of electric static charging

Internal friction of the blasting material creates an electrostatic charge.
Danger from electrostatic discharges.

Electrically grounding the blasting system and cleaning objects!

Risk of damage to electronic assemblies. Electrically ground the cleaning object and maintain grounding during the entire cleaning process. If the voltage cannot be dissipated through the system feet (ESD), the device must also be grounded. A suitable contact point is located under the system.

3.8 Personal protective equipment

Personal protective equipment is used to protect people from impairments to safety and health at work.

Symbol	Significance
	Wear protective gloves
	Wear a protective mask
	Wear eye and hearing protection
	Read the user manual

3.9 Signage

3.9.1 User information

Fig.: Overview of warning signs

Symbol	Significance
	Warning
	Electrical voltage warning
	Warning of cold burns
	Warning about carbon dioxide (CO_2)
	Do not direct dry ice jet at people
	Wear protective gloves
	Wear a protective mask
	Wear eye and hearing protection
	Read the user manual

3.9.2 Nameplate

Fig.: Overview of the nameplate

NO.	ELEMENT
1	Nameplate

NOTE!
The nameplate must always be visible and must not be removed.

Data nameplate

The nameplate contains the following information:

- Serial number
- Telephone number service hotline / ice cream order
- Year of manufacture, CE mark
- QR code: Link to the guides and help center
- Operating pressure

4 Serve

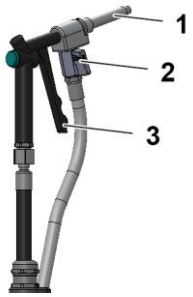
4.1 Preparation before the start

Connecting the compressed air supply

1. Connect compressed air supply **1**.
2. Roll out the hose completely and place it straight on the floor

Perform recoil

Perform recoil to remove any condensation that may have occurred.



1. Open ball valve **2** on the gun.
2. Press jet nozzle **1** onto a flat surface.
3. Press trigger **3** for about 5 seconds to remove condensation.

Filling the container

1. Open lid **1** and pour dry ice up to **half** the filling level. Start blasting. During operation, refill abrasive to the maximum fill level.

2. Open ball valve **3** on the gun and throttle valve **2** (blue) completely.

4.2 Blasting

Press trigger **1** .

- The system needs about 6 seconds to start up. During this time, only compressed air and little to no dry ice is used. After that, the full blasting power is available.

  The suction tube must not be frozen or jammed in order to be able to swing in the container.

4.3 De-icing the blasting nozzle

Pull retaining spring 1 slightly upwards,

Pull the spray nozzle 2 out to the front.

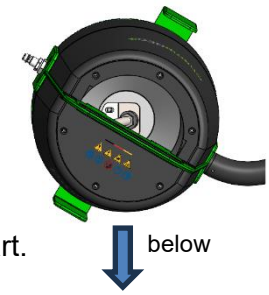
Remove ice.

- With longer blasting time and humid environments, ice can form in the blasting nozzle. By using a second blasting nozzle, a system downtime due to icing can be avoided.

4.4 After use

NOTE!
A small amount of dry ice remains in the container for technical reasons.

1. Pour out the remaining dry ice.
2. Perform a knockback again.
3. Remove residual moisture from rotor:
   Lie down at an angle as in the picture,
   the residual moisture runs to the outlet of the rotor.
   Press the shutter release briefly, the rotor should not start.
   If necessary, move the system slightly.



Completely emptying extends the service life of the system.

5 Technical data

Dimensions (L/W/H)	**380/300/400 mm**
WEIGHT	6.5kg
COMPRESSED AIR DEMAND	150 - 250 l/min at 5 bar
MAX. INLET PRESSURE	10 bar
RADIANCE	6 bar in continuous operation
DRIVE	Purely pneumatic; No electricity connection
ICE BUCKET FILLING CAPACITY	2 kg
DRY ICE CONSUMPTION	6 kg - 15 kg/h (depending on blasting pressure)
ABRASIVES	1.5mm or 3.0mm dry ice pellet
COMPRESSED AIR CONNECTION	European Standard Nipple NW 7.2 mm
MAX. INLET PRESSURE	10 bar
SOUND PRESSURE LEVEL	between 85dB and 100dB, depending on the blast pressure and surface being cleaned.

6 Maintenance and repair

6.1.1 Before Use

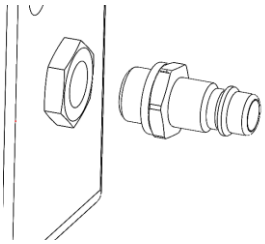
Roll out the hose completely and place it straight on the floor
Open ball valve 2 on the gun.
Press jet nozzle 1 onto a flat surface.
Press trigger 3 for about 5 seconds to remove condensation.

6.1.2 After use

Open ball valve 2 on the gun.
Press jet nozzle 1 onto a flat surface.
Press trigger 3 for about 5 seconds to remove condensation.
Wrap the hose into the hose holders around the system.

7 Changing the compressed air connection

Turn the externally threaded coupling plug counterclockwise with a suitable tool. If necessary, hold against the hexagon on the system.
Screw new plug into G1/4" internal thread.



8 Dismantling and disposal

The national regulations must be observed for the disposal of the device.

9 Operational Disruption Analysis

Disruption	Cause-Solution
No compressed air on the gun	Connecting compressed air – main switch on the Turn on the compressor
No pellet conveying	Kinked pellet hose → pellets can't → check the pellet hose for kinks and replace it if necessary. No pellets in the container or false pellets → only pellets with a diameter of 1.5 or 3mm may be used. Sealed ice supply→ Ball valve always open completely
Poor cleaning performance	Vibration device cannot move freely→ pellets cannot be crushed →Empty ice bucket completely, perform

	recoil (10-20 seconds) and fill again with free-flowing dry ice only half at the beginning. The suction power is too low→ pellets cannot be sucked in →check the compressed air supply, repair damage to the jet nozzle, open the throttle valve on the ball valve completely. Vibrator does not reach the necessary speed→ pellets cannot be sucked in →Check the compressed air supply, open the throttle valve on the ball valve completely. Distance from vibrating tube to counter plate does not fit → pellets cannot be sufficiently shredded → maintenance by trained personnel is necessary.
Vibrator too weak or does not start	Unbalance is frozen solid → no or insufficient vibration of the container→ Empty the dry ice container and allow the system to thaw (15-20 minutes at room temperature) Wear or damage to the mechanics → pellets cannot be dosed sufficiently→ maintenance by trained personnel necessary.
After some blasting time, there is no more ice	Jet nozzle is iced. See "De-icing the blast nozzle"

10 EC declaration of conformity

EG-Konformitätserklärung

Gemäß der EG-Maschinen-Richtlinie (MRL) 2006/42/EG vom 17. Mai 2006, Anhang II A

für **Maschinen**

Die Bauart der **Maschine (Handelsbezeichnung):**	Trockeneisstrahlgerät
Fabrikat/Funktion/Modell/Typ:	Serie Champ
Serien-Nr./Baujahr:	Angabe auf Typenschild der Maschine

Die oben bezeichnete Maschine wurde in alleiniger Verantwortung entwickelt, konstruiert und gefertigt von:

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Hiermit erklären wir, dass die oben genannte Maschine **allen einschlägigen Bestimmungen der EG-Maschinenrichtlinie 2006/42/EG entspricht**.

Die technischen Unterlagen wurden gemäß Anhang VII A der MRL 2006/42/EG erstellt und können der zuständigen Marktüberwachungsbehörde auf Verlagen vorgelegt werden.

Dokumentationsverantwortlicher (in der Gemeinschaft ansässig): Gernot Schnettler

Die zur Maschine gehörende(n) Betriebsanleitung(en) (Original und ggfs. Übersetzungen) – und ggfs. Einbauerklärungen und Montageanleitung(en) – liegt/liegen vor.

Berlin 01.01.2026	Gernot Schnettler, Geschäftsführer	
Ort, Datum	Name, Funktion des Bevollmächtigten	Stempel, Unterschrift des Bevollmächtigten