LEISTER®

ALLIED POWER TOOLS

VACUUM BOX
VACUUM BELL

with VACUUM PUMP

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Please read the Operating Instructions carefully before use and keep them for future reference.

Leister VACUUM BOX & BELL with Leister VACUUM PUMP Test device

Read the Operating Instructions for the VTE3 vacuum pump carefully before use and keep them for future reference.

Application

The VACUUM BOX & VACUUM BELL are suitable for non-destructive testing of the tightness of welded seams. Any other application is not permitted.

Warning

The VACUUM BOX and VACUUM BELL must not come into contact with aggressive substances (such as acetone or diluents, etc.) and may only be operated with the VACUUM PUMP provided by Leister.

Danger of fire and explosion.
Do not store any flammable materials in the box of the VACUUM PUMP. Allow the VACUUM PUMP to cool down before putting it into storage.

Danger of injury from plastic fragments during commissioning. Excessive negative pressure or damaged plastic glass may lead to implosion.
Protect the equipment from mechanical damage such as an impact or fall. Do not use the VACUUM BOX or VACUUM BELL if they are defective.

Wear protective goggles. Danger of implosion

Connect the device to an **outlet with a protective conductor**. Any interruption of the protective conductor inside or outside the device is dangerous!
Use extension cables with protective conductors only!

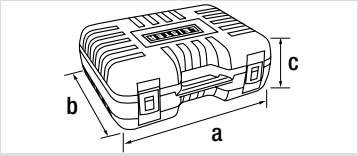
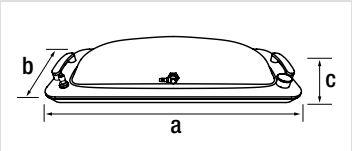
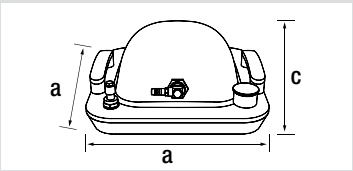
Caution

Devices **must be operated** under supervision.
Devices may only be used by **trained specialists** or under their supervision. Children are not permitted to operate the equipment under any circumstances.

Protect the device against humidity and dampness.

The nominal voltage specified on the device must match the mains voltage.
The power supply cord must be disconnected from the electricity supply in the event of a mains voltage failure.

Technical data

Max. permissible differential pressure	**inHg/bar**	14.75/0.5
Permissible ambient temperature in operation	**°C/°F**	0–50 / 32–122
VACUUM PUMP weight	**kg/lbs**	9.9 / 21.8
VACUUM BOX weight	**kg/lbs**	3.8 / 8.4
VACUUM BELL weight	**kg/lbs**	1.5 / 3.3
Case dimensions 	**mm** **inches**	a=545 / b=195 / c=142 a=21.5 / b=7.7 / c=5.6
VACUUM BOX dimensions 	**mm** **inches**	a=830 / b=320 / c=150 a=32.7 / b=12.6 / c=5.9
VACUUM BELL dimensions 	**mm** **inches**	a=320 / c=150 a=12.6 / c=5.9
Accuracy class of the manometer		1.6 (1.0 upon request)

We reserve the right to make technical changes

Transport

- When transporting the devices, store and secure them in a way that prevents any mechanical damage.
- If not being used, store and secure the devices in a way that prevents any mechanical damage.

VACUUM BOX with VACUUM PUMP device description

1. Vacuum pump
2. Vacuum box
3. Case
4. Handle
5. Sealing lip
6. Manometer
7. Hose
8. Regulating relief valve

VACUUM BELL with VACUUM PUMP device description

1. Vacuum pump
2. Vacuum bell
3. Case
4. Handle
5. Sealing lip
6. Manometer
7. Hose
8. Regulating relief valve

Operating principle

Testing is carried out with the transparent **VACUUM BOX (2)** or **VACUUM BELL (2)**, which is connected to the **VACUUM PUMP (1)** using the **hose (7)**. To make sure the testing area is completely air-tight, the **VACUUM BOX (2)** and the **VACUUM BELL (2)** feature a **sealing lip (5)** on the contact surface. During the test, the **VACUUM PUMP (1)** creates negative pressure inside the **VACUUM BOX (2) / VACUUM BELL (2).**

Preparing and commissioning the VACUUM BOX/VACUUM BELL with VACUUM PUMP

Danger of injury from plastic fragments during commissioning.
Excessive negative pressure or damaged plastic glass may lead to implosion.
Protect the equipment from mechanical damage such as an impact or fall. Do not use the VACUUM BOX or VACUUM BELL if they are defective.

Wear protective goggles. Danger of implosion

Connect the device to an **outlet with a protective conductor**. Any interruption of the protective conductor inside or outside the device is dangerous!
Use extension cables with protective conductors only!

- Open the case. The **VACUUM PUMP (1)** is mounted inside the **case (3)** and must not be removed for use.
- The cooling air intake of the **VACUUM PUMP (1)** must never be obstructed or clogged. **(Fig. A)**
- Check the **hose (7)** for damage.
- Check the **VACUUM BOX (2) / VACUUM BELL (2)** for any faults (such as cracks, fissures, or scrapes) before every use. A defective **VACUUM BOX (2) / VACUUM BELL (2)** may cause an implosion.
- Before every use, check that the **regulating relief valve (8)** can easily be moved manually by pressing on the **lock nut (11)** with your hand. The **regulating relief valve (8)** should now open and close. If you find it difficult to do this, clean the valve or replace it. **(Fig. B)**
- **Set the adjusting nut (10)** of the **regulating relief valve (8)** to the minimum pressure before every use (Factory setting 0.2 bar). To do this, the **adjusting nut (10)** and **lock nut (11)** must be screwed counterclockwise up to the top end of the grub screw. **(Fig. C)**

Fig. A

Fig. B

Fig. C

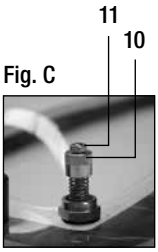


Fig. D

Fig. E

- Prior to commissioning, check the power supply cord, the plug, and the extension cable for electrical and mechanical damage.
- Connect the hose to the **VACUUM BOX (2) / VACUUM BELL (2) (Fig. E)** and the **VACUUM PUMP (1) (Fig. D)**.
- Connect the **VACUUM PUMP (1)** to nominal voltage. The nominal voltage specified on the device must match the mains voltage. (**CAUTION:** Pump starts immediately)

Preparing and commissioning the VACUUM BOX/VACUUM BELL with VACUUM PUMP

- Set the required negative pressure using the **regulating relief valve (8)**:
  - Place the **VACUUM BOX (2) / VACUUM BELL (2)** on the membrane to be tested and then push it/them down.
  - During the testing phase, the negative pressure (max. 0.5 bar) can be set using the **adjusting nut (10)** on the **regulating relief valve (8)**. To do this, the **adjusting nut (10)** must be screwed downward in a clockwise direction. **(Fig. F)**
  - When the required value is set, the **adjusting nut (10)** of the **regulating relief valve (8)** needs to be locked using the **lock nut (11)** (A/F 10). When in operation, the **adjusting nut (10)** must always be secured by the **lock nut (11)**. **(Fig. G)**
  - Use the **regulating relief valve (8) (Fig. K)** to relieve the negative pressure.

Fig. F

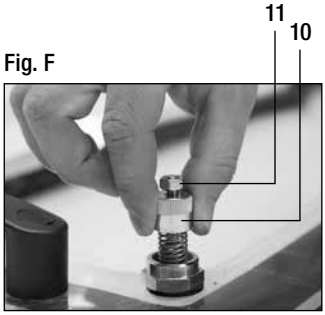


Fig. G

Testing using a VACUUM BOX/VACUUM BELL with VACUUM PUMP

- The welding area must be dry and free of contamination. Dirt particles may compromise the test.
- The welding area to be tested is to be lubricated or sprayed with a liquid which forms bubbles (such as soapsuds) directly before the test. (This is to ensure that the liquid has no unacceptable effects on the seam and the welding material).
- Position the **VACUUM BOX (2) / VACUUM BELL (2)** at the point to be tested.
- Place the **VACUUM BOX (2) / VACUUM BELL (2)** and then push down on it so that the seam to be tested lies at the approximate center of the longitudinal axis of the **VACUUM BOX (2) / VACUUM BELL (2) (Fig. H)**. For extended test sections, the **VACUUM BOX (2) / VACUUM BELL (2)** needs to be repositioned accordingly. When moving the **VACUUM BOX (2) / VACUUM BELL (2),** make sure it/they overlap(s) the testing areas.
- To enable a negative pressure to be generated, the **VACUUM BOX (2) / VACUUM BELL (2)** must be pressed down onto the testing area using both **handles (4)**. **(Fig. I)**

The negative pressure is displayed on the **manometer (6)**. **The negative pressure should never exceed 0.5 bar; disregarding this may cause an implosion.**

- Check the weld seam for leaks.
- The seam is regarded as being tight when negative pressure builds up quickly, remains constant for the duration of the test, and does not cause bubbles to form in the seam.
- Use the **regulating relief valve (8)** to relieve the negative pressure. **(Fig. K)**
- Mark and repair any areas that are not tight.

Fig. H

Fig. I

Fig. K

End of the tests

Danger of fire and explosion.
Do not store any flammable materials in the box of the VACUUM PUMP. Allow the VACUUM PUMP to cool down before putting it into storage.

Once testing has finished, disconnect the power supply cord from the electricity supply.

- Remove the **hose (7)** from the **VACUUM PUMP (1)** and **VACUUM BOX (2) / VACUUM BELL (2)** and place it in the **case (3)**.
- Close the **case (3)**.

Maintenance

- For further information on maintenance, please observe the Operating Instructions of the VTE3 Picolino VACUUM PUMP.

Accessories

- Only Leister accessories may be used for technical and safety-related reasons.

Training course

- Leister Technologies AG and its authorized Service points offer free welding courses and introductory training classes. Information at www.leister.com.

Service and repair

- Repairs shall be assigned exclusively to authorized Service points . These guarantee a professional and reliable repair service within a useful deadline with original spare parts in accordance with circuit diagrams and spare parts lists.

Warranty

- The guarantee or warranty rights granted for this device by the direct distribution partner/salesman apply after the date of purchase. In the event of a guarantee or warranty claim (verification by invoice or delivery note), manufacturing or processing errors will be rectified by the sales partner through replacement delivery or repair.
- Other guarantee or warranty claims are excluded within the framework of mandatory law.
- Damages resulting from natural wear, overload, or improper handling are excluded from the warranty.
- No guarantee or warranty claims exist for devices that have been converted or modified by the purchaser.

Prima della messa in servizio leggere attentamente le presenti istruzioni per l'uso e conservarle per una futura consultazione.

Leister VACUUM BOX e VACUUM BELL con Leister VACUUM PUMP Apparecchiatura di prova

Prima della messa in servizio leggere attentamente le istruzioni per l'uso della pompa per vuoto VTE3 e conservarle per una futura consultazione.

Applicazione

VACUUM BOX e VACUUM BELL vengono usati per eseguire prove non distruttive di verifica della compattezza dei cordoni di saldatura. È vietato qualsiasi utilizzo diverso da quello previsto.

Avvertenza

Impedire il contatto tra VACUUM BOX e VACUUM BELL con sostanze aggressive (ad es. acetone, diluenti, ecc.); utilizzare esclusivamente con la VACUUM PUMP fornita da Leister.

Pericolo di incendio ed esplosione.
Non collocare materiali infiammabili nella cassa del prodotto VACUUM PUMP. Fare raffreddare il prodotto VACUUM PUMP prima di immagazzinarlo nuovamente.

Rischio di lesioni causate da frammenti di materiale sintetico durante la messa in servizio. Pericolo di implosione in presenza di alto vuoto o di vetro sintetico danneggiato.
Proteggere l'apparecchio da danneggiamenti di natura meccanica come urti o cadute.
Non mettere in funzione VACUUM BOX o VACUUM BELL che presentano anomalie.

Indossare occhiali di protezione. Pericolo di implosione

Allacciare l'apparecchio a una **presa di corrente provvista di conduttore di terra**. Eventuali interruzioni della linea di messa a terra all'interno o all'esterno dell'apparecchio sono fonti di pericolo!
Usare esclusivamente cavi di prolunga con messa a terra!

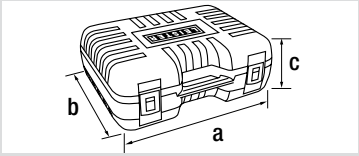
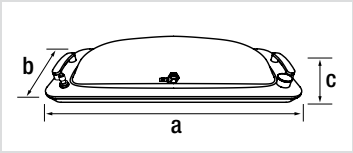
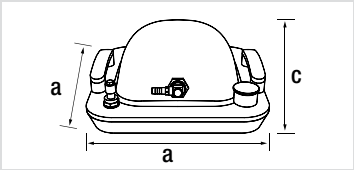
Attenzione

Gli apparecchi **devono essere azionati** sotto controllo visivo.
L'impiego degli apparecchi **è consentito esclusivamente** a personale qualificato o sotto il monitoraggio di quest'ultimo. È tassativamente vietato l'impiego da parte dei bambini.

Proteggere l'apparecchio da umidità e da ambienti bagnati.

Tensione nominale: quella indicata sull'apparecchio deve corrispondere alla tensione di rete.
In caso di interruzione della tensione di rete, scollegare il cavo di collegamento dalla rete.

Specifiche tecniche

Pressione differenziale max. ammissibile	**inHg/bar**	14,75/0,5
intervallo di temperatura ambiente ammissibile in esercizio	**°C/°F**	0–50 / 32–122
Peso VACUUM PUMP	**kg/lb**	9,9 / 21,8
Peso VACUUM BOX	**kg/lb**	3,8 / 8,4
Peso VACUUM BELL	**kg/lb**	1,5 / 3,3
Dimensioni cassa di trasporto 	**mm** **pollici**	a=545 / b=195 / c=142 a=21,5 / b=7,7 / c=5,6
Dimensioni VACUUM BOX 	**mm** **pollici**	a=830 / b=320 / c=150 a=32,7 / b=12,6 / c=5,9
Dimensioni VACUUM BELL 	**mm** **pollici**	a=320 / c=150 a=12.6 / c=5.9
Classe di precisione manometro		1,6 (1,0 su richiesta)

Modifiche tecniche riservate

Trasporto

- Durante il trasporto, stivare e bloccare in sicurezza gli apparecchi, in modo tale da evitare eventuali danni di natura meccanica.
- Durante il fermo macchina, stivare e bloccare in sicurezza gli apparecchi, in modo tale da evitare eventuali danni di natura meccanica.

Descrizione dell'apparecchio VACUUM BOX con VACUUM PUMP

1. Vacuum Pump
2. Vacuum Box
3. Cassa di trasporto
4. Impugnatura
5. Labbro di tenuta
6. Manometro
7. Tubo flessibile
8. Valvola di scarico/regolazione

Descrizione dell'apparecchio VACUUM BELL con VACUUM PUMP

1. Vacuum Pump
2. Vacuum Bell
3. Cassa di trasporto
4. Impugnatura
5. Labbro di tenuta
6. Manometro
7. Tubo flessibile
8. Valvola di scarico/regolazione

Your authorised Service Centre is:

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BA VACUUM BOX/VACUUM BELL with VACUUM PUMP
Art. 153.694 (part 1) / 06.2015 / 03.2020