

### 3-393-R001 / R002

## SF<sub>6</sub> gas refilling device

**For reliable refilling of SF<sub>6</sub> gas by overpressure**

3-393-R001

**SF<sub>6</sub> gas refilling device**

Portable with rubber hose and couplings DN8 and DN20

3-393-R002

**SF<sub>6</sub> gas refilling device**

Portable **in a case** with rubber hose and couplings DN8 and DN20

The handy devices allow filling of electrical equipment with SF<sub>6</sub> gas directly from the bottle by overpressure. The primary gauge of the pressure reducer displays the bottle pressure in bar, the secondary gauge indicates the desired filling pressure to be set easily by means of the handle. The bottle pressure can be reduced to the desired filling pressure by the integrated pressure reducer.



- Self-closing couplings for emission-free gas handling
- Available as accessories for the world's most commonly used bottle connections

3-393-R001 / 3-393-R002

## SF<sub>6</sub> gas refilling device

### Technical data:

Case dimensions: L 475 mm, W 380 mm, H 125 mm
Weight: 7.5 kg

### Standard equipment for both versions:

Pressure reducer for SF <sub>6</sub> gas with W 21.8 x 1/14" thread
5 m long hose DN8
DILLO coupling tongue parts DN8 and DN20
Gauge indication in bar
2 operating manuals in 3 languages (German / English / French)

### Optional accessories at an extra charge:

SF <sub>6</sub> bottle connection with 0.96" Whitworth left-handed thread	3-245-R001 P
English SF <sub>6</sub> bottle connection with G 5/8 thread	3-245-R002 P
SF <sub>6</sub> bottle connection with G 5/8 thread	3-643-R001 P
Additional operating manual on CD-ROM	6-0004-R213

### Packing:

Packing for 3-393-R001	3-948-R006
Packing for 3-393-R002	3-775-R013-C

### Note:

Other versions are available on request.

### 3-001-R001 / R002

## SF<sub>6</sub> gas refilling device

**For reliable refilling of SF<sub>6</sub> gas by overpressure**

3-001-R001

**SF<sub>6</sub> gas refilling device**

Mobile as cylinder cart with **wire-braided hoses**

3-001-R002

**SF<sub>6</sub> gas refilling device**

Mobile as cylinder cart with **rubber hoses**

Refilling device as cylinder cart for comfortable on board carrying of a gas bottle. The primary gauge of the pressure reducer displays the bottle pressure in bar, the secondary gauge indicates the desired filling pressure to be set easily by means of the handle. The bottle pressure can be reduced to the desired filling pressure by the integrated pressure reducer.



- Stable frame
- Available as accessories for the world's most commonly used bottle connections
- Hose reel
- Self-closing couplings prevent emissions
- Change of couplings feasible without gas loss

3-001-R001 / 3-001-R002

## SF<sub>6</sub> gas refilling device

### Technical data:

Dimensions: L 480 mm, W 540 mm, H 1,360 mm
Weight: 24 kg

### Standard equipment for both versions:

SF <sub>6</sub> bottle connection W 21.8 x 1/14"
Ball valve with hand wheel
6 m long hose DN8
Pressure reducer for SF <sub>6</sub> (0 up to 10 bar)
DILLO coupling tongue parts DN8 and DN20
Paint: orange (RAL 2004)
2 operating manuals in 3 languages (German / English / French)

### Optional equipment (mounted) at an extra charge:

Special pressure indication kPa	6-0005-R163
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### Optional accessories at an extra charge:

SF <sub>6</sub> bottle connection with 0.96" Whitworth left-handed thread	3-334-R001 P
SF <sub>6</sub> bottle connection with G 5/8 thread	3-315-R001 P
English SF <sub>6</sub> bottle connection with G 5/8 thread	3-245-R003 P
Additional operating manual on CD-ROM	6-0004-R213

### Packing:

Packing for 3-001-R001 / 3-001-R002	3-262-R001-C
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### 3-001-R021 / R022

## SF<sub>6</sub> gas refilling device

**For refilling switchgear with SF<sub>6</sub> gas by overpressure**

3-001-R021

**SF<sub>6</sub> gas refilling device with electronic weighing scales 0 - 150 kg**

Mobile as cylinder cart with **wire-braided hoses**

3-001-R022

**SF<sub>6</sub> gas refilling device with electronic weighing scales 0 - 150 kg**

Mobile as cylinder cart with **rubber hoses**

Refilling device as cylinder cart for comfortable on board carrying of a gas bottle. The primary gauge of the pressure reducer displays the bottle pressure in bar. The secondary gauge indicates the desired filling pressure to be set easily by means of the handle. The bottle pressure can be reduced to the desired filling pressure by the integrated pressure reducer.

Emissions during the refilling process are avoided by self-closing couplings. The weight of the gas to be refilled can be registered easily by means of integrated weighing scales. The weight is indicated on a display which is switched off automatically if the scales are unused for a longer time. The previous weight indication is reset after switching on by pressing the key.



- Stable frame
- Accuracy of the weighing scales ±50 g, 0.05 kg increments
- No emissions by self-closing couplings
- Available as accessories for the world's most commonly used bottle connections
- Hose reel
- Couplings can be exchanged without any gas loss

3-001-R021 / 3-001-R022

# **SF<sub>6</sub> gas refilling device with electronic weighing scales 0 - 150 kg**

## **Technical data:**

Dimensions: L 720 mm, W 570 mm, H 1,510 mm
Weight: 48 kg

## **Standard equipment for both versions:**

Weighing scales 0 - 150 kg
SF <sub>6</sub> bottle connection W 21.8 x 1/14"
Ball valve with hand wheel
6 m long hose DN8
Pressure reducer for SF <sub>6</sub> (0 up to 10 bar)
DILO coupling tongue parts DN8 and DN20
Paint: orange (RAL 2004)
2 operating manuals in 3 languages (German / English / French)

## **Optional equipment (mounted) at an extra charge:**

Special pressure indication kPa	6-0005-R163
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## **Optional accessories at an extra charge:**

SF <sub>6</sub> bottle connection with 0.96" Whitworth left-handed thread	3-334-R001 P
SF <sub>6</sub> bottle connection with G 5/8 thread	3-315-R001 P
English SF <sub>6</sub> bottle connection with G 5/8 thread	3-245-R003 P
Additional operating manual on CD-ROM	6-0004-R213

## **Packing:**

Packing for 3-001-R021 / 3-001-R022	3-262-R006-C
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### 3-001-4-R002 / R022

## Evacuating and refilling device

**For evacuation of air and refilling of gas compartments from SF<sub>6</sub> gas bottles**

3-001-4-R002

**Evacuating and refilling device**

Mobile as cylinder cart

3-001-4-R022

**Evacuating and refilling device with electronic weighing scales 0 - 150 kg**

Mobile as cylinder cart

In practice the device covers two important functions. The integrated vacuum pump is the core component of the device. This vacuum pump evacuates the air down to < 1 mbar so that no air/gas mixture is produced during the subsequent filling process. The well proven DILO coupling principle ensures safe handling without emission.

Using the 3-001-4-R022 version, the filling weight can be registered comfortably by means of a weighing scale.



- Stable frame
- Accuracy of the weighing scales ±50 g, 0.05 kg increments
- No emissions by self-closing couplings
- Available as accessories for the world's most commonly used bottle connections
- Hose reel
- Couplings can be exchanged without any gas loss

## 3-001-4-R002 / 3-001-4-R022

### Evacuating and refilling device

#### Technical data 3-001-4-R002:

Dimensions: L 540 mm, W 570 mm, H 1,360 mm
Weight: 55 kg
Operating voltage: 220 - 240 V / 50 - 60 Hz alternating current

#### Technical data 3-001-4-R022:

Dimensions: L 720 mm, W 570 mm, H 1,510 mm
Weight: 82 kg
Operating voltage: 220 - 240 V / 50 - 60 Hz alternating current

#### Standard equipment for both versions:

16 m <sup>3</sup> /h vacuum pump for air, final vacuum < 1 mbar
Ball valve with hand wheel
Gauge 0 to -1,200 mbar
Two 6 m long wire-braided hoses DN8
DILLO coupling tongue parts DN8 and DN20
SF <sub>6</sub> bottle connection W 21.8 x 1/14"
Pressure reducer for SF <sub>6</sub> (0 up to 10 bar)
Paint: orange (RAL 2004)
2 operating manuals in German, English or French

#### Optional equipment (mounted) at an extra charge:

Additional price for electrical special voltage 100 V / 50 - 60 Hz or 110 - 120 V / 60 Hz	6-0005-R030
Additional price for electrical special voltage 127 V / 50 Hz or 200 V / 50 - 60 Hz	6-0005-R138
Special pressure indication kPa	6-0005-R163

#### Optional accessories at an extra charge:

SF <sub>6</sub> bottle connection with 0.96" Whitworth left-handed thread	3-334-R001 P
SF <sub>6</sub> bottle connection with G 5/8 thread	3-315-R001 P
English SF <sub>6</sub> bottle connection with G 5/8 thread	3-245-R003 P
Additional operating manual on CD-ROM	6-0004-R213

#### Spare parts kit for both versions:

Maintenance package for vacuum pump, dry and particle filter included	6-1048-R111
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#### Packing:

Packing for 3-001-4-R002	3-262-R001-C
Packing for 3-001-4-R022	3-262-R006-C



## B048R03 / R13

# Portable vacuum pump unit

For evacuation of air or nitrogen

B048R03

**Portable vacuum pump unit**

B048R13

**Vacuum pump unit with solenoid valve instead of ball valve**

This version is equipped with a solenoid valve instead of a ball valve. Therefore, operating errors are avoided since the valve is closed automatically in case of function end or interruption of circuit.

Whenever a separate vacuum pump unit is required: The portable version is a very handy solution. The vacuum pump unit has been specially designed for the evacuation of air or nitrogen. The vacuum pump is the core component with a capacity of 16 m<sup>3</sup>/h and a final vacuum of < 1 mbar. Thus it is guaranteed that SF<sub>6</sub> gas is not contaminated with air and the good insulation properties of SF<sub>6</sub> are retained.



- Use of self-closing couplings DN20
- Adapters for other nominal widths are available
- Gas refilling device available as accessories
- Different voltage range available as option
- Hose reel
- Digital vacuum indication 0 - 100 mbar

B048R03 / B048R13

## Portable vacuum pump unit

### Technical data:

Dimensions: L 500 mm, W 400 mm, H 605 mm
Weight: 36 kg
Operating voltage: 220 - 240 V / 50 - 60 Hz alternating current

### Standard equipment:

16 m <sup>3</sup> /h vacuum pump, final vacuum < 1 mbar
Vacuum indication in mbar
Ball valve DN20
5 m long hose DN20
DILLO coupling tongue part DN20
Electric control
Paint: orange (RAL 2004)
2 operating manuals in German, English or French

### Optional equipment (mounted) at an extra charge:

Additional price for electrical special voltage 100 V / 50 - 60 Hz or 110 - 127 V / 60 Hz	6-0005-R030
Additional price for electrical special voltage 127 V / 50 Hz or 200 V / 50 - 60 Hz	6-0005-R138

### Optional accessories at an extra charge:

SF <sub>6</sub> gas refilling device	3-393-R001
Additional operating manual on CD-ROM	6-0004-R213

### Spare parts kit:

Maintenance package for vacuum pump, dry and particle filter included	6-1048-R111
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### Packing:

Packing for B048R03 / B048R13	3-748-R002-C
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## B046R03 / R13

# Mobile vacuum pump unit

**For evacuation of air or nitrogen**

B046R03

**Mobile vacuum pump unit**

B046R13

**Mobile vacuum pump unit with solenoid valve instead of ball valve**

This version is equipped with a solenoid valve instead of a ball valve. Therefore, operating errors are avoided since the valve is closed automatically in case of function end or interruption of circuit.

The mobile vacuum pump unit is convincing by its easy handling. The unit serves for evacuation of air or nitrogen from switchgear. The 40 m<sup>3</sup>/h vacuum pump enables a final vacuum of < 1 mbar. Thus it is guaranteed that no air / gas mixture is generated and the good insulation properties of SF<sub>6</sub> are retained.



- Steerable and fixing rollers allow comfortable transportation
- Use of self-closing couplings DN20
- Different performances are available (see options)
- Adapters for other nominal widths are available
- Protection of the vacuum pump against overpressure by a solenoid valve
- Digital vacuum indication in mbar

B046R03 / B046R13

## Mobile vacuum pump unit

### Technical data:

Dimensions: L 910 mm, W 535 mm, H 1,075 mm
Weight: 115 kg
Operating voltage: 208 - 240 V / 380 - 460 V / 50 - 60 Hz alternating current

### Standard equipment:

40 m <sup>3</sup> /h vacuum pump for air, final vacuum < 1 mbar
Vacuum indication in mbar
Ball valve DN20
5 m long hose DN20
DILLO coupling tongue part DN20
Electric control
Fixing and steerable rollers
Different wrenches
Paint: orange (RAL 2004)
2 operating manuals in German, English or French

### Optional equipment (mounted) at an extra charge:

63 m <sup>3</sup> /h vacuum pump, final vacuum < 1mbar	6-0005-R050
100 m <sup>3</sup> /h vacuum pump, final vacuum < 1mbar	6-0005-R051
40 m <sup>3</sup> /h two-stage vacuum pump, final vacuum < 2 x 10 <sup>-3</sup> mbar	6-0005-R028
65 m <sup>3</sup> /h two-stage vacuum pump, final vacuum < 2 x 10 <sup>-3</sup> mbar	6-0005-R101
Additional price for electrical special voltage	6-0005-R039

### Optional accessories at an extra charge:

SF <sub>6</sub> gas refilling device	3-393-R001
Frame with crane eyelets and plastic cover	B089R04
Additional operating manual on CD-ROM	6-0004-R213

### Spare parts kits:

Maintenance package for standard vacuum pump (40 m <sup>3</sup> )	6-1048-R112
Maintenance package for 6-0005-R050 / R051 vacuum pump (63 / 100 m <sup>3</sup> )	6-1048-R113
Maintenance package for two-stage 6-0005-R028 / R101 vacuum pump (40 / 65 m <sup>3</sup> )	6-1048-R114

### Packing:

Packing for B046R03 / B046R13	3-748-R001-C
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## B046R20

# Mobile vacuum pump unit

### For evacuation of air or nitrogen

This vacuum pump unit is "powerful" - its nominal suction capacity is 200 m<sup>3</sup>/h at 50 Hz for quick and reliable evacuation of air to a final vacuum of 1 mbar. This unit is particularly suitable for the evacuation of large gas compartments.

Two coupling connections (DN20 and DN40) allow the evacuation of two gas compartments at the same time without any manifold that means more efficiency and higher productivity during operation.



- Steerable and fixing rollers allow comfortable transportation
- Use of self-closing couplings DN20 and DN40
- Protection of the vacuum pump against overpressure by a solenoid valve
- Different hose lengths are available as option
- Digital vacuum indication in mbar
- Tool box for hoses and accessories

B046R20

## Mobile vacuum pump unit

### Technical data:

Dimensions: L 1,310 mm, W 780 mm, H 1,140 mm
Weight: 332 kg
Operating voltage: 208 - 240 V / 380 - 460 V / 50 - 60 Hz 3-phase current

### Standard equipment:

Vacuum pump for air, nominal suction capacity 200 m³/h (at 50 Hz), 240 m³/h (at 60 Hz), final vacuum < 1 mbar
Vacuum indication in mbar
Solenoid valve
DILO couplings DN20 and DN40
Electric control
Fixing and steerable rollers
Tool box
Different wrenches
Paint: orange (RAL 2004)
2 operating manuals in German, English or French

### Optional equipment (mounted) at an extra charge:

Additional price for electrical special voltage	6-0005-R039
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### Optional accessories at an extra charge:

5 m long rubber hose DN20 with coupling tongue part DN20 on both ends	6-1017-R050
10 m long rubber hose DN20 with coupling tongue part DN20 on both ends	6-1017-R100
5 m long wire-braided hose DN40 with coupling tongue part DN40 on both ends	6-1076-R050
10 m long wire-braided hose DN40 with coupling tongue part DN40 on both ends	6-1076-R100
5 m long wire-braided hose DN40 with coupling tongue part DN40 on one end and coupling tongue part DN20 on the other end	6-1080-R050
10 m long wire-braided hose DN40 with coupling tongue part DN40 on one end and coupling tongue part DN20 on the other end	6-1080-R100
Frame with crane eyelets and plastic cover	B089R19
Additional operating manual on CD-ROM	6-0004-R213

### Spare parts kit:

Maintenance package for vacuum pump, dry and particle filter included	6-1048-R121
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### Packing:

Packing for B046R20	3-748-R017-C
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## Z300R11 / R12

# Mobile vacuum pump unit

### For evacuation of air or nitrogen

Z300R11

#### Mobile vacuum pump unit

Nominal suction capacity **165 m<sup>3</sup>/h** vacuum pump

Nominal suction capacity **250 m<sup>3</sup>/h** Roots pump

Z300R12

#### Mobile vacuum pump unit

Nominal suction capacity **205 m<sup>3</sup>/h** vacuum pump

Nominal suction capacity **495 m<sup>3</sup>/h** Roots pump

This series is very powerful and allows quick evacuation of large gas compartments. A vacuum pump combined with a Roots pump enables to obtain a final vacuum of  $2 \times 10^{-2}$  mbar. Thus not only air but also moisture is removed from the circuit breakers. Therefore the subsequent filling process is prepared perfectly.

Three coupling connections (DN20 and 2 x DN40) allow the evacuation of two gas compartments at the same time without any manifold that means more efficiency and higher productivity during operation.



- Steerable and fixing rollers allow comfortable transportation
- Tool box for hoses and accessories
- Self-closing couplings
- Protection of the vacuum pump against overpressure by a solenoid valve
- Different hose lengths are available as option
- Digital vacuum indication in mbar

Z300R11 / Z300R12

## Mobile vacuum pump unit

### Technical data:

Dimensions: L 1,250 mm, W 800 mm, H 1,500 mm
Weight: 450 kg
Operating voltage: 208 - 240 V / 380 - 460 V / 50 - 60 Hz 3-phase current

### Standard equipment:

Roots pump, mounted on a vacuum pump, final vacuum $2 \times 10^{-2}$ mbar
Solenoid valve DN50
DILO couplings DN20 and 2 x DN40
Digital vacuum indication in mbar
Electric control
Fixing and steerable rollers
Crane eyelets
Tool box for hoses
Different wrenches
Paint: orange (RAL 2004)
2 operating manuals in German, English or French

### Optional equipment (mounted) at an extra charge:

Additional price for electrical special voltage	6-0005-R039
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### Optional accessories at an extra charge:

5 m long rubber hose DN20 with coupling tongue part DN20 on both ends	6-1017-R050
10 m long rubber hose DN20 with coupling tongue part DN20 on both ends	6-1017-R100
5 m long wire-braided hose DN40 with coupling tongue part DN40 on both ends	6-1076-R050
10 m long wire-braided hose DN40 with coupling tongue part DN40 on both ends	6-1076-R100
5 m long wire-braided hose DN40 with coupling tongue part DN40 on one end and coupling tongue part DN20 on the other end	6-1080-R050
10 m long wire-braided hose DN40 with coupling tongue part DN40 on one end and coupling tongue part DN20 on the other end	6-1080-R100
Tarpaulin	K029R55
Additional operating manual on CD-ROM	6-0004-R213

### Spare parts kit:

Maintenance package for vacuum pump, dry and particle filter included	6-1048-R131
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### Packing:

Packing for Z300R11 / Z300R12	3-1001-R015-C
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### Note:

Vacuum pump units with larger capacities are available on request.