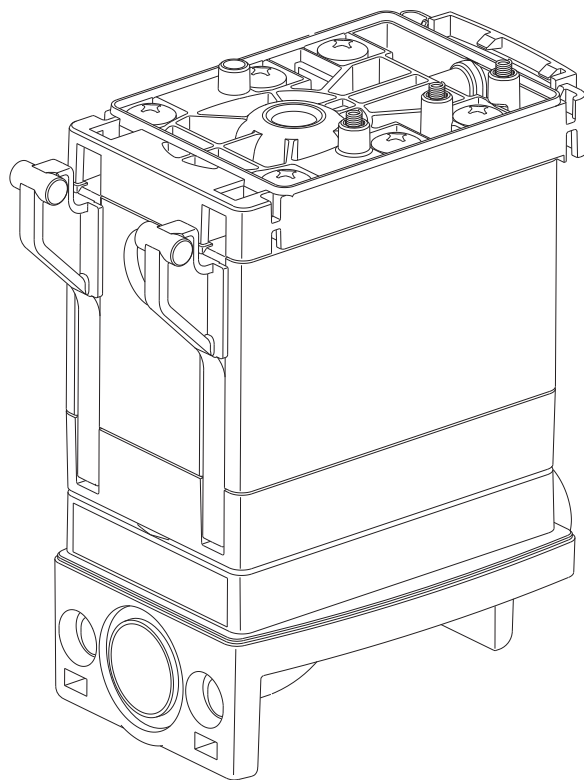


EN-US - english US



## **Service-Unit BEKOMAT® 33 / 33 CO**



|  |   |  |
|--|---|--|
| <p><b>Headquarter :</b></p> <p><b>Deutschland / Germany</b><br/> BEKO TECHNOLOGIES GMBH<br/> Im Taubental 7<br/> D-41468 Neuss<br/> Tel.: +49 (0)2131 988 0<br/> beko@beko.de</p>                                      | <p>中华人民共和国 / <b>China</b><br/> BEKO TECHNOLOGIES (Shanghai) Co. Ltd.<br/> Rm.606 Tomson Commercial Building<br/> 710 Dongfang Rd.<br/> Pudong Shanghai China<br/> P.C. 200122<br/> Tel. +86 21 508 158 85<br/> beko@beko.cn</p> | <p><b>France</b><br/> BEKO TECHNOLOGIES S.a.r.l.<br/> Zone Industrielle<br/> 1 Rue des Frères Remy<br/> F- 57200 Sarreguemines<br/> Tel. +33 387 283 800<br/> beko@wanadoo.fr</p>  |
| <p><b>India</b><br/> BEKO COMPRESSED AIR TECHNOLOGIES Pvt. Ltd.<br/> Plot No.43/1, CIEEP, Gandhi Nagar, Balanagar, Hyderabad - 500 037, INDIA<br/> Tel +91 40 23080275<br/> eric.purushotham@bekoindia.com</p>         | <p><b>Italia / Italy</b><br/> BEKO TECHNOLOGIES S.r.l<br/> Via America 14<br/> I - 10071 Borgaro Torinese (TO)<br/> Tel. +39 0114 500 576<br/> info.it@beko.de</p>  | <p>日本 / <b>Japan</b><br/> BEKO TECHNOLOGIES K.K<br/> KEIHIN THINK 8 Floor<br/> 1-1 Minamiwatarida-machi<br/> Kawasaki-ku, Kawasaki-shi<br/> JP-210-0855<br/> Tel. +81 44 328 76 01<br/> info@beko-technologies.co.jp</p> |
| <p><b>Benelux</b><br/> BEKO TECHNOLOGIES B.V.<br/> Vaartveld 25<br/> NL - 4704 SE Roosendaal<br/> Tel. +31 165 320 300<br/> info@beko.nl</p>   | <p><b>Polska / Poland</b><br/> BEKO TECHNOLOGIES Sp. z o.o.<br/> ul. Chłapowskiego 47<br/> PL-02-787 Warszawa<br/> Tel +48 (0)22 855 30 95<br/> info.pl@beko.de</p>   | <p><b>Scandinavia</b><br/> BEKO TECHNOLOGIES AS<br/> P.O.Box 12 N-1393 Vollen<br/> Leangbukta 31<br/> N-1392 VETTRE<br/> Tel +47 31 29 10 50<br/> kjell@beko-technologies.no</p>   |
| <p><b>España / Spain</b><br/> BEKO Tecnológica España S.L.<br/> Polígono Industrial "Armenteres"<br/> C./Primer de Maig, no.6<br/> E-08980 Sant Feliu de Llobregat<br/> Tel. +34 93 632 76 68<br/> info.es@beko.de</p> | <p><b>South East Asia</b><br/> BEKO TECHNOLOGIES S.E.Asia (Thailand) Ltd.<br/> 75/323 Romklao Road<br/> Sansab, Minburi<br/> Bangkok 10510<br/> Thailand<br/> Tel. +66 (0) 2-918-2477<br/> BEKO-info@beko-seasia.com</p>        | <p><b>臺灣 / Taiwan</b><br/> BEKO TECHNOLOGIES Co.,Ltd<br/> 16F.-5, No.79, Sec. 1,<br/> Sintai 5th Rd., Sijhih City,<br/> Taipei County 221,<br/> Taiwan (R.O.C.)<br/> Tel. +886 2 8698 3998<br/> info@beko.com.tw</p>     |
| <p><b>Česká Republica / Czech Republic</b><br/> BEKO TECHNOLOGIES s.r.o.<br/> Mlýnská 1392<br/> CZ - 562 01 Usti nad Orlici<br/> Tel. +420 465 52 12 51<br/> info.cz@beko.de</p>                                       | <p><b>United Kingdom</b><br/> BEKO TECHNOLOGIES LTD.<br/> 2 West Court<br/> Buntsford Park Road<br/> Bromsgrove<br/> GB-Worcestershire B60 3DX<br/> Tel. +44 1527 575 778<br/> beko@beko-uk.com</p>                             | <p><b>USA</b><br/> <b>BEKO TECHNOLOGIES CORP.</b><br/> <b>900 Great SW Parkway</b><br/> <b>US - Atlanta, GA 30336</b><br/> <b>Tel. +1 (404) 924-6900</b><br/> <b>beko@bekousa.com</b></p>                                |

---

|   |   |    |
|---|---|----|
| 1 | Safety instructions .....                   | 4  |
| 2 | Technical data .....                        | 6  |
| 3 | Control and maintenance .....               | 7  |
| 4 | Troubleshooting and fault elimination ..... | 12 |
| 5 | Elements and components.....                | 13 |
| 6 | Recommended spare parts .....               | 13 |
| 7 | Declaration of conformity .....             | 14 |

### 1 Safety instructions



**Please check whether or not these instructions correspond to the device type.**

Adhere to all advice given in these operating instructions. They include essential information which must be observed during the installation, operation and maintenance. Therefore it is imperative for the service technician and the responsible operator / technical staff to read these operating instructions prior to installation, start-up and maintenance.

The operating instructions must be accessible at any time at the place of application of the Service-Unit BEKOMAT® 33 / 33 CO.

In addition to these operating instructions, local or national regulations must be complied with, if necessary.

Make sure that the Service-Unit BEKOMAT® 33 / 33 CO is operated only within the permissible limit values indicated on the ID plate. Any deviation involves a risk for persons and materials, and may result in malfunction and service failures.

If you have any queries regarding these installation- and operating instructions, please contact BEKO TECHNOLOGIES CORP.



**Danger!**

**Compressed air!**

**Risk of serious injury or death through contact with quickly or suddenly escaping compressed air or through bursting plant components or plant components which are not secured.**

#### Measures:

- Do not exceed the maximum operating pressure (see type plate).
- **Only carry out service measures when the system is pressure less.**
- Use pressure-resistant installation material only.
- The feed pipe must be tubed firmly. Discharge pipe: short, fixed pressure hose onto pressure-resistant pipe.
- Make sure that persons or objects cannot be hit by condensate or escaping compressed air.



**Danger!**

**Supply voltage!**

**There is the risk of an electric shock involving injury or death when coming into contact with non-insulated components carrying supply voltage.**

#### Measures:

- During electric installations, all regulations in force need to be adhered to (e.g. VDE 0100).
- **Service measures must only be undertaken when the system is deactivated.**
- **The removed control unit has no IP degree of protection.**
- All types of electrical works must be carried out by authorized and qualified personnel only.

#### Further safety instructions:

- For installation and operation, the national regulations and safety codes in force must also be adhered to.
- Do not use the BEKOMAT 33 / 33 CO / Vario 33 / 33 CO in hazardous areas.
- Regarding the inlet screw joints, excessive tightening forces must be avoided. This applies in particular to conical screw joints.
- The BEKOMAT 33 / 33 CO / Vario 33 / 33 CO will only function when voltage is applied.
- Do not use the test button for permanent drainage.
- Use genuine spare parts only. This is imperative to ensure perfect functioning.

**Additional advice:**

- During installation, use the spanner flat at the feed pipe (wrench size SW28 + 34) as a back rest.
- The service unit must not be dismantled.

**Warning!****Malfunction during operation!**

Through incorrect installation and poor maintenance, malfunction may occur at the BEKOMAT.

Condensate which is not discharged may cause damage to plants and in production processes.



**Measures:**

- Condensate drainage which is reliable in performance directly optimizes the compressed-air quality.
- To prevent damage and breakdowns, it is imperative to observe the following:
  - Exact compliance with the specifications of use and with the performance parameters of the BEKOMAT, in connection with the case of application (see "Proper use" section)
  - Exact compliance with the installation- and operation instructions in this manual
  - Regular maintenance and control of the BEKOMAT in accordance with the instructions in this operating manual

## Technical data

---

### 2 Technical data

|   |   |
|---|---|
|   |   |
| min./max. operating pressure  | 0,8...16 bar (12...230 psi)                 |
| min./max. temperature   | +1...+60 °C (+34...+140 °F)                 |
| Condensate inflow   | Zulauf über Kondensatsammelhalter           |
| Condensate outflow  | G ½ (½") Ø 13 mm hose connector             |
| Condensate  | oil-contaminated + oil-free                 |
| Housing   | aluminium + plastic, glass fibre-reinforced |
| Weight (empty)  | 0,78 kg (1.71 lbs)                          |

### 3 Control and maintenance



**Danger!**

**Compressed air!**

**Risk of serious injury or death through contact with quickly or suddenly escaping compressed air or through bursting plant components or plant components which are not secured.**

**Measures:**

- Do not exceed the maximum operating pressure (see type plate).
- **Only carry out service measures when the system is pressure less.**
- Use pressure-resistant installation material only.
- The feed pipe must be tubed firmly. Discharge pipe: short, fixed pressure hose onto pressure-resistant pipe.
- Make sure that persons or objects cannot be hit by condensate or escaping compressed air.



**Danger!**

**Supply voltage!**

**There is the risk of an electric shock involving injury or death when coming into contact with non-insulated components carrying supply voltage.**

**Measures:**

- During electric installations, all regulations in force need to be adhered to (e.g. VDE 0100).
- **Service measures must only be undertaken when the system is deactivated.**
- **The removed control unit has no IP degree of protection.**
- All types of electrical works must be carried out by authorized and qualified personnel only.



**Warning!**

**Malfunction during operation!**

**Through incorrect installation and poor maintenance, malfunction may occur at the BEKOMAT.**

**Condensate which is not discharged may cause damage to plants and in production processes.**

**Measures:**

- Condensate drainage which is reliable in performance directly optimizes the compressed-air quality.
- To prevent damage and breakdowns, it is imperative to observe the following:
  - Exact compliance with the specifications of use and with the performance parameters of the BEKOMAT, in connection with the case of application (see "Proper use" section)
  - Exact compliance with the installation- and operation instructions in this manual
  - Regular maintenance and control of the BEKOMAT in accordance with the instructions in this operating manual



**Note**

It is imperative to observe all hazard statements and warnings listed here.

Please also observe all regulations and notes regarding industrial safety and fire prevention at the place of installation.

As a matter of principle, only use suitable and appropriate tools and materials in a proper condition.

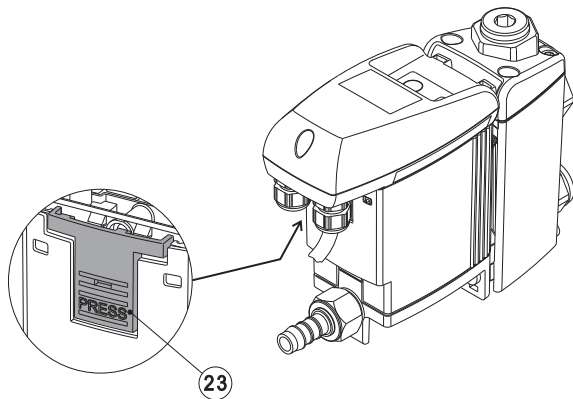
Do not use aggressive cleaners.

Please note that condensates may contain aggressive or harmful components. Therefore, skin contact

## Control and maintenance

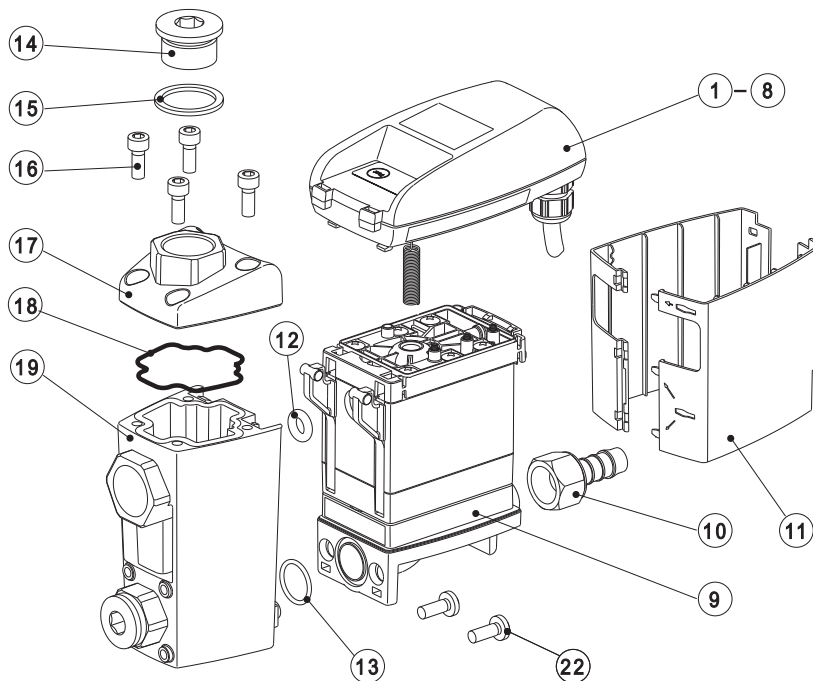
should be avoided.

Condensate is subject to mandatory waste disposal. As such, it must be collected in suitable containers, and disposed of or processed properly.

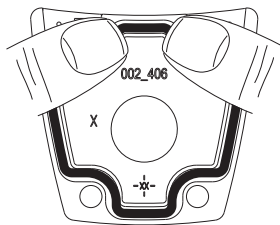
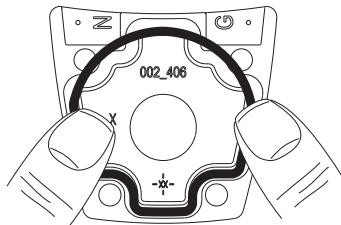
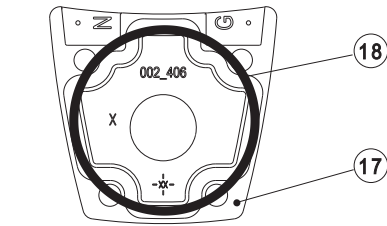


### Maintenance including cleaning of the condensate container:

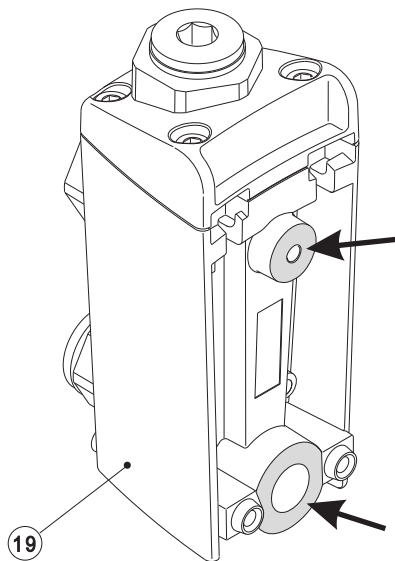
1. Remove the control unit (1...8) by pressing the arresting hook (23)
2. Unfasten BEKOMAT from the outlet
3. Detach BEKOMAT from the tubing at the inlet
4. Unscrew both M6 bolts (22) and remove the service unit (9) by slightly pulling and lifting it
5. Remove the design shell (11) using a screwdriver
6. Unscrew the four cover screws (16) and remove the cover (17)
7. Clean the condensate receiver tank (19)



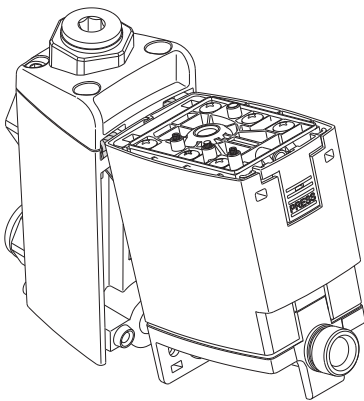
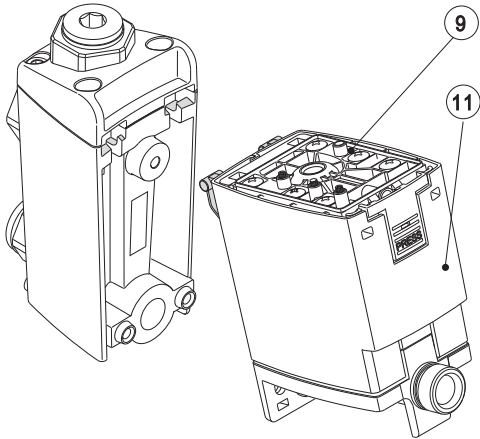




8. Insert new cover O-ring (18) according to the diagram
9. Clean the sealing surfaces of the cover
10. Put on the cover (17) with the new O-ring and carefully tighten the four cover screws (16) crosswise ( Nm)



11. Clean the sealing surfaces (←) at the condensate receiver tank (19)



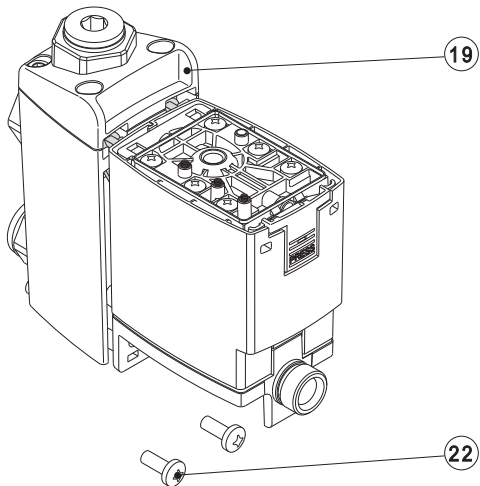
12. Check whether or not the service unit (9) goes with the control unit (1...8) (model designation and color of the arresting hook)

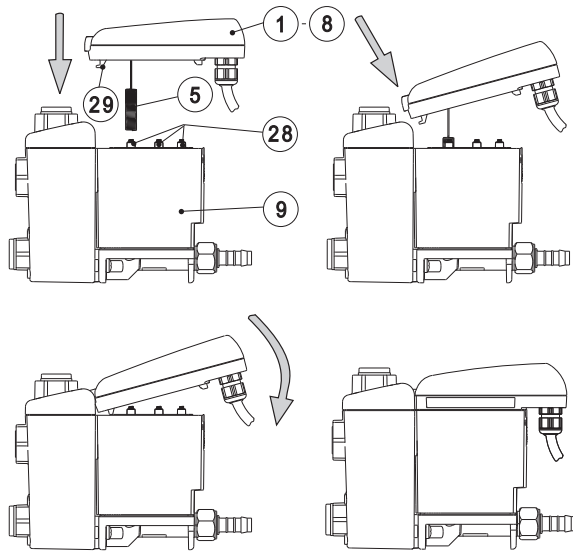
13. Check the O-rings at the new service unit (12, 13)

14. Mount the design shell (11)

15. Mount the service unit along with the design shell at the condensate receiver tank (19) and tighten both erection bolts (22) (Nm)

16. Re-install the BEKOMAT at the inlet tubing and outlet, in reverse order to disassembly





### Installation of the control unit on the service unit BEKOMAT:

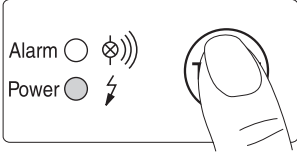
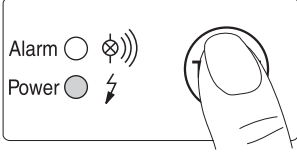
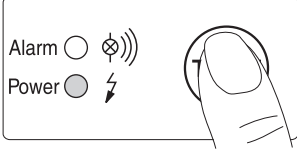
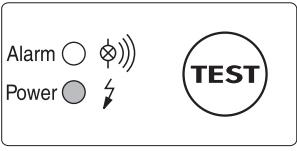
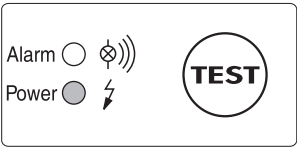
1. Check whether or not the service unit with contact springs (28) is clean, dry and free from impurities.
2. Introduce the sensor (5) into the service unit (9).
3. Insert the hook (29) of the control unit (1...8) in the service unit (9).
4. Press the control unit (1...8) against the service unit (9), snap into place and make sure it is securely mounted.

### Start-up subsequent to maintenance measures:

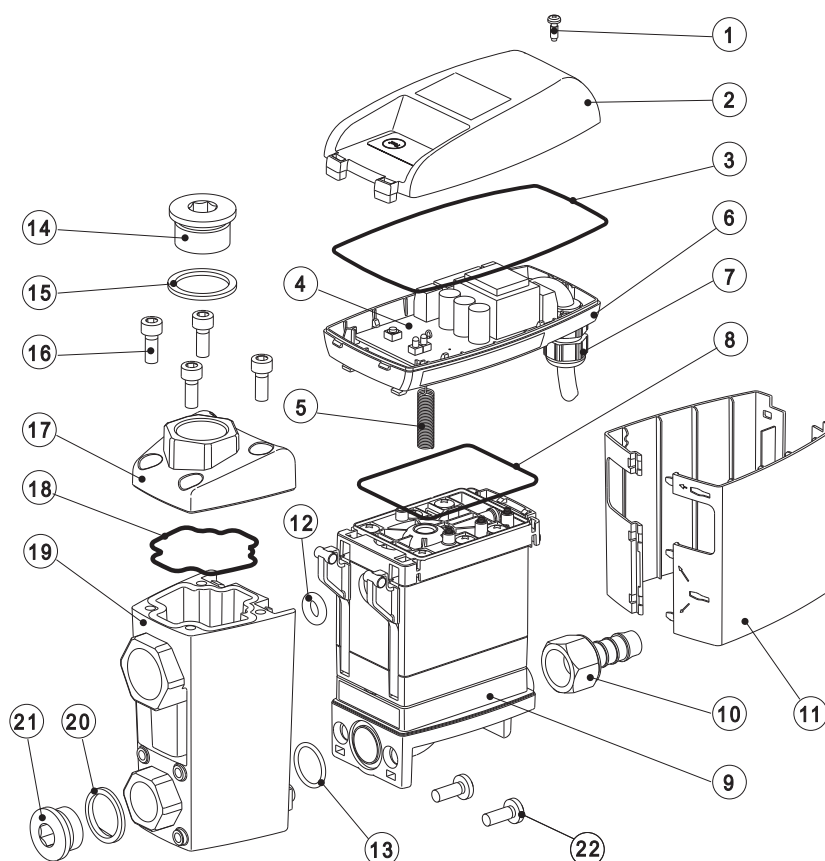
Always carry out prior to the start-up:

- Leak test of the screwed connector of the condensate receiver tank and of the connection of this tank to the service unit
- Control of the electrical connections
- Check of the correct engagement of the control unit

### 4 Troubleshooting and fault elimination

| Symptoms  | Possible reasons   | Measures   |
|---|--|--|
|  <p><b>LED does not light up</b></p>                                     | <p>Supply voltage incorrect<br/>Circuit board defective</p>  | <p>Check voltage on the type plate<br/>Check the connections and the supply voltage<br/>Check the circuit boards for possible damage</p>   |
|  <p><b>Test button pressed, but no condensate discharge</b></p>          | <p>Feed pipe and / or discharge pipe blocked or obstructed<br/>Wear and tear<br/>Circuit board defective<br/>Service unit defective<br/>Minimum pressure not reached<br/>Maximum pressure exceeded</p> | <p>Check feed and discharge pipe<br/>Check whether or not the valve opens audibly (press the test button several times for &gt;2 seconds)<br/>Check the circuit board for possible damage<br/>Check the operating pressure</p> |
|  <p><b>Condensate discharge only when the test button is pressed</b></p> | <p>Feed pipe without sufficient slope<br/>Cross section not large enough<br/>Condensate accumulation too high (surge)<br/>Service unit extremely dirty</p>   | <p>Install feed pipe with a slope<br/>Replace the service unit</p>   |
|  <p><b>Device blows off continuously</b></p>                           | <p>Service unit defective or dirty</p>   | <p>Replace the service unit</p>  |
|  <p><b>The device is not tight</b></p>                                 | <p>O-rings between the condensate receiver tank and the service unit are defective or the sealing surfaces are dirty<br/>The screw joints are not tightened</p>  | <p>Check the screw joints<br/>Dismantle the service unit, control the O-rings and sealing surfaces<br/>Replace O-rings if required and clean the sealing surfaces<br/>Check tightness after the installation</p>               |

## 5 Elements and components



- |                           |                                      |
|---------------------------|--------------------------------------|
| 1 Screw 3.5 x 10          | 12 O-ring 8 x 4                      |
| 2 Upper part of the cover | 13 O-ring 18.5 x 2                   |
| 3 Molded gasket           | 14 Locking screw G ½                 |
| 4 Circuit board           | 15 Flat gasket                       |
| 5 Sensor                  | 16 Hexagon socket head screw M6 x 16 |
| 6 Lower part of the cover | 17 Lid                               |
| 7 Cable bushing           | 18 O-ring 48.9 x 2.62                |
| 8 Cord packing 2.5 x 235  | 19 Condensate receiver tank          |
| 9 Service unit            | 20 Flat gasket                       |
| 10 Hose connector G ½     | 21 Locking screw G ½                 |
| 11 Design shell           | 22 Cross recessed head screw M6 x 16 |

## 6 Recommended spare parts

| Available sets of spare parts | Contents         | Order number                |
|-------------------------------|------------------|-----------------------------|
| Service unit                  | 9, 12, 13        | XE KA33 101 SAP no. 4012873 |
| Service unit CO               | 9, 12, 13        | XE KA33 103 SAP no. 4012872 |
| Gasket kit                    | 3, 8, 12, 13, 18 | XE KA33 002 SAP no. 4012922 |
| Design shell                  | 11               | XE KA32 011 SAP no. 4010167 |

### 7 Declaration of conformity

BEKO TECHNOLOGIES GMBH  
41468 Neuss, GERMANY  
Tel: +49 2131 988-0  
www.beko.de



## EG-Konformitätserklärung

Wir erklären hiermit, dass die nachfolgend bezeichneten Produkte in der von uns gelieferten Ausführung den Anforderungen der einschlägigen Normen entsprechen:

|                                   |   |
|-----------------------------------|---|
| Produktbezeichnung:               | Kondensatableiter   |
| Modelle:                          | BEKOMAT 31, 32, 33  |
| Spannungsvarianten:               | 24VAC, 24VDC, 100VAC, 115VAC, 200VAC, 230VAC  |
| Druckvarianten:                   | 0,8 - 16 Bar Betriebsdruck  |
| Produktbeschreibung und Funktion: | Kondensatableiter zur elektronisch niveaugeregelten Ableitung von Kondensat im Druckluftnetz. |

#### Niederspannungs-Richtlinie 2006/95/EG

|                                       |   |
|---------------------------------------|---|
| Angewandte harmonisierte Normen:      | EN 60730-1:2000 + A1:2004 + A12:2003 + A13:2004 + A14:2005 + A15:2007 |
|                                       | EN 60730-2-15:1995 + A1:1998 + A11:2005                               |
| Anbringungsjahr der CE-Kennzeichnung: | BEKOMAT 31, 32: 06<br>BEKOMAT 33: 09                                  |

#### EMV-Richtlinie 2004/108/EG

|                    |  |
|--------------------|--|
| Angewandte Normen: | EN 61000-3-2:2006                      |
|                    | EN 61000-3-3:1995: + A1:2001 + A2:2005 |
|                    | EN 61000-6-3:2007                      |
|                    | EN 61000-6-2:2005                      |

Die Produkte sind mit dem abgebildeten Zeichen gekennzeichnet:



Diese Erklärung bezieht sich nur auf die Produkte in dem Zustand, in dem sie in Verkehr gebracht wurden. Nicht vom Hersteller angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt.

Neuss, 07.04.2009

BEKO TECHNOLOGIES GMBH

A handwritten signature in black ink, appearing to read "Christian Riedel".  
i.V. Christian Riedel  
Leiter Qualitätsmanagement

**BEKO TECHNOLOGIES GMBH**  
41468 Neuss, GERMANY  
Tel: +49 2131 988-0  
www.beko.de



## EC Declaration of Conformity

We hereby declare that the products indicated hereafter, in the delivered performance, comply with the stipulations of the relevant standards:

|                                   |  |
|-----------------------------------|--|
| Product designation:              | Condensate drain   |
| Types:                            | BEKOMAT 31, 32, 33   |
| Voltage options:                  | 24VAC, 24VDC, 100VAC, 115VAC, 200VAC, 230VAC   |
| Pressure options:                 | 0.8 - 16 bar operating pressure  |
| Product description and function: | Condensate drain for the electronically level-controlled discharge of condensate in the compressed-air system. |

### Low-Voltage Directive 2006/95/EC

|                               |   |
|-------------------------------|---|
| Harmonized standards applied: | EN 60730-1:2000 + A1:2004 + A12:2003 + A13:2004 +<br>A14:2005 + A15:2007<br>EN 60730-2-15:1995 + A1:1998 + A11:2005 |
| Year of CE labeling:          | BEKOMAT 31, 32: 06<br>BEKOMAT 33: 09  |

### EMC Directive 2004/108/EC

|                    |   |
|--------------------|---|
| Applied standards: | EN 61000-3-2:2006<br>EN 61000-3-3:1995: + A1:2001 + A2:2005<br>EN 61000-6-3:2007<br>EN 61000-6-2:2005 |
|--------------------|---|

The devices are labeled with the sign shown below:



This declaration only refers to products in the condition in which they have been placed into circulation. Parts which have not been installed by the manufacturer and / or modifications which have been implemented subsequently remain unconsidered.

Neuss, 7 April 2009

**BEKO TECHNOLOGIES GMBH**

p.p. Christian Riedel  
Quality manager

|  |  |   |
|--|--|---|
| <b>A</b>                                 |  | Lower part of the cover ..... 13                                      |
| Angle adapter..... 13                    |  |   |
| <b>B</b>                                 |  | <b>M</b>  |
| Blows off ..... 12                       |  | Maintenance..... 7  |
| <b>C</b>                                 |  | Maintenance including cleaning of the condensate<br>container ..... 8 |
| Circuit board..... 13                    |  | Malfunction ..... 12  |
| Components..... 13                       |  | <b>N</b>  |
| Condensate discharge disturbed ..... 12  |  | No condensate discharge ..... 12                                      |
| Control ..... 7                          |  | <b>O</b>  |
| <b>D</b>                                 |  | Order number ..... 13   |
| Danger compressed air ..... 4, 7         |  | <b>Q</b>  |
| Danger supply voltage ..... 4, 7         |  | Qualified personnel ..... 4, 7  |
| Data ..... 6                             |  | <b>R</b>  |
| Declaration of conformity ..... 14       |  | Recommended spare parts..... 13                                       |
| Degree of protection ..... 4, 7          |  | <b>S</b>  |
| <b>E</b>                                 |  | Safety instructions..... 4  |
| Elements ..... 13                        |  | Sensor ..... 13   |
| <b>F</b>                                 |  | Service measures ..... 4, 7   |
| Failure ..... 12                         |  | Service unit ..... 13   |
| Fault clearance ..... 12                 |  | Sets of spare parts ..... 13  |
| Fault diagnosis..... 12                  |  | Spare parts..... 4, 13  |
| Fault elimination..... 12                |  | <b>T</b>  |
| <b>I</b>                                 |  | Technical data..... 6   |
| Instructions, safety instructions..... 4 |  | Troubleshooting ..... 12  |
| Intermediate adapter..... 13             |  | <b>U</b>  |
| <b>L</b>                                 |  | Upper part of the cover ..... 13                                      |
| LED does not light up ..... 12           |  |   |









