

# BEKOMAT®

LEADING THE WAY IN  
CONDENSATE DRAINAGE



## SMALL DROPS WITH A POWERFUL IMPACT ON PRODUCTION

### ALWAYS AND EVERYWHERE

Condensate formation is unavoidable. It is always a "by-product" of compressed air generation and spreads throughout the entire compressed air network. Around two thirds of the condensate is produced in the aftercooler. The rest occurs anywhere in the network as the compressed air cools down. This problem is inherent in the system and can cause both damage and higher costs.

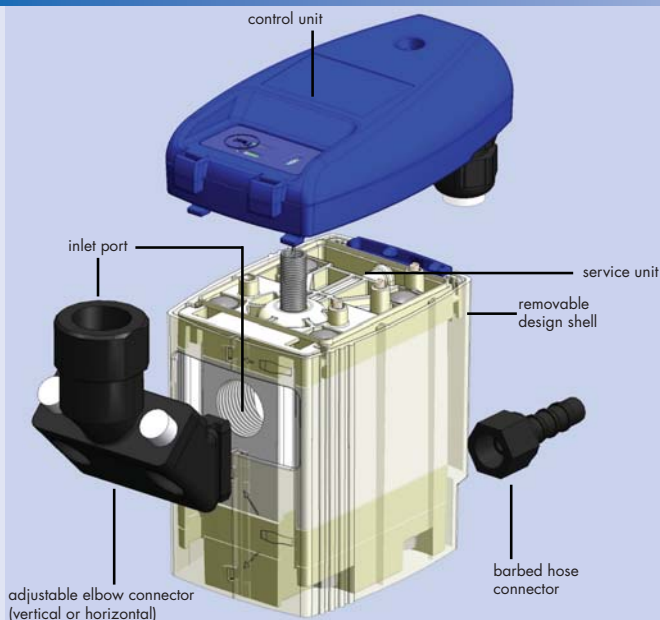
The condensate may:

- be aggressive (pH value)
- carry dirt particles  
(pipe corrosion, pollution of the air)
- contain harmful substances  
(ambient air)
- be contaminated with oil (oil-lubricated compressors)

It must also be considered that the amount of compressed air condensate produced will vary according to the:

- temperature
- climate zone
- location above sea-level
- relative atmospheric humidity
- distance from the sea
- compressed air flow rate

The solution is a condensate drainage system adapted to the actual amount produced. This will cut costs and prevent damage. BEKOMAT® condensate drains – designed for the electronically level-controlled discharge of the condensate in compressed air networks – functions without unnecessary loss of compressed air and with minimal energy input. Our customers are clearly convinced by the high economic efficiency and reliability of the device: there are now more than 1,000,000 BEKOMAT® units installed worldwide.



### BEKOMAT® 31 and 32

The BEKOMAT® 31 and 32 are consequential enhancements on proven solutions. Even more reliable, with fast and problem free installation. Maintenance that once took hours, now takes only seconds. BEKO achieves these targets through a construction that has never been realized until now, and consists of only two units joined by a simple, snap-fit connection.

**The innovation made by  
BEKO. Setting the standard  
for the future today.**

+ 1:

+ 2:

+ 3:

+ 4:

+ 5:

+ 6:

## A SOUND DECISION – AND OPTIMUM RESULTS



### TRUE ZERO AIR LOSS

*Maximum energy savings*

### HIGHEST RELIABILITY

*Unaffected by dirt*

### LOWEST MAINTENANCE

*Reduce overall time and costs*

### SENSOR CONTROLLED

*Safe for all condensate types*

### FULLY AUTOMATIC

*Monitors level and function*

### INTEGRATED ALARM

*With remote detection*

### BEKOMAT® GUARANTEES A SHORT PAYBACK PERIOD

BEKOMAT® from BEKO has become the industrial standard because of its high reliability and particularly because it offers energy-saving operation without loss of compressed air. There are a number of very good technical reasons for this:



Compared with float drains, BEKOMAT® has decisive advantages, especially since it:

- functions unaffected by dirt, resulting in reliable operation
- is equipped with a fault signal
- requires very little maintenance
- has large cross-sections to prevent emulsification

BEKOMAT® also has decisive advantages over solenoid valves, especially since it:

- operates in accordance with the actual condensate quantity
- avoids unnecessary loss of compressed air
- is equipped with a fault signal
- has large cross-section value to prevent emulsification

### BEKOMAT® FOR ALL OPERATING CONDITIONS

A wide range of BEKOMAT® models makes it possible to select a suitable and cost-effective device for each particular application. The device can be adapted to all the usual supply voltages; the operating elements and the control system are protected to IP 65.

# OVERVIEW OF BEKOMAT®-MODELS AND APPLICATIONS

STANDARD-BEKOMAT®



## STANDARD BEKOMAT® BEKOMAT® 12, 13, 14, 16, 31, AND 32

- Compressor  
Around 60 percent of the total condensate is produced in the aftercooler of the compressor.
- Receiver  
More than 10 percent of the total condensate stems from the air receiver.
- Dryer  
Up to 25 percent of the total condensate separates from the vapour in the refrigeration dryer. Therefore, efficient drying requires equally efficient condensate drainage.
- Filter  
What is the use of a perfect filter if the condensate drain is not matched to the task or not functioning correctly? Our standard BEKOMAT® series of drains are perfectly suitable and have design elements specifically for compressed air filters.

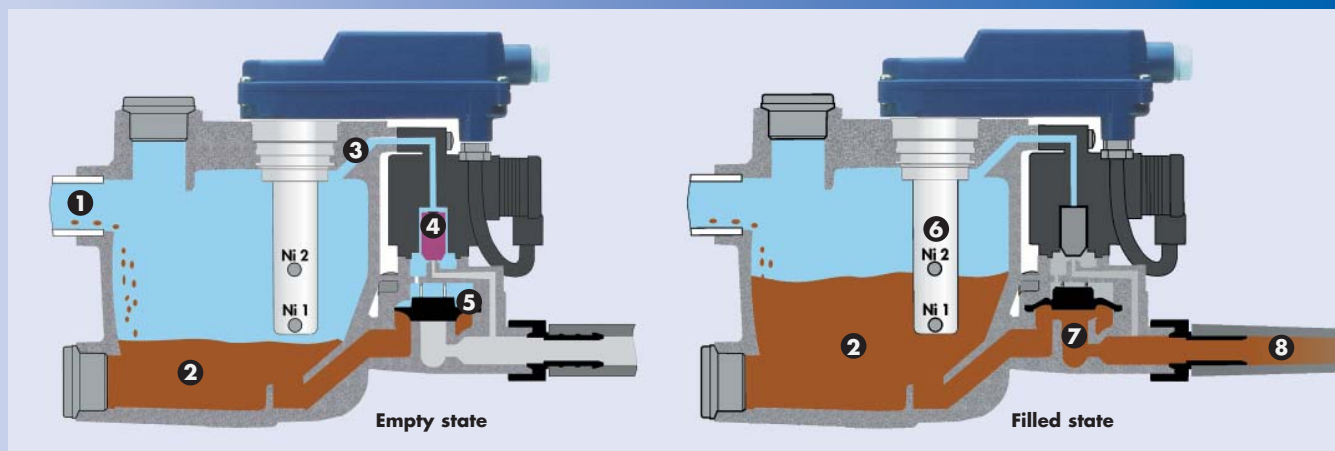
SPECIAL-BEKOMAT®



## SPECIAL BEKOMAT® BEKOMAT® 3, 6, 8, AND 9

- Multistage compressor  
If the condensate from the intercoolers of a multistage compressor is not reliably removed, it will get into the next compressor stage. The BEKOMAT® CV and LA/LP models prevent the impeller of turbo compressors coming under "drop attack" and eliminates condensate build-up and water hammering. They even manage leaking water-coolers.
- Vacuum  
A device specifically developed for vacuum or pressureless systems with operating pressures from 1.5 to 25 psi (abs.).
- Hazardous areas For application in hazardous areas where spark prevention is crucial. The device is rated for use in area II 2G EEx ib IIB T4, i.e., for explosion class II B and temperature class T4. Permissible fluids are: benzene, ethane, methane, town gas, butadiene, ethyl alcohol, methanol, diesel fuel, ethylene, propane, petroleum, heating oil, and hydrogen sulphide.
- Stainless steel versions  
For the removal of highly aggressive condensates.

## FUNCTIONAL DESCRIPTION USING BEKOMAT® 14 AS AN EXAMPLE



### Empty state:

Condensate trickles through the inlet opening and collects in the container **2**. The diaphragm valve is closed, since the pilot supply line **3** and the solenoid valve **4** ensure pressure compensation above the valve diaphragm **5**. The larger surface area above the diaphragm results in a high closing force, so that the valve seat is tight and leakproof.

### Filled state:

When the container **2** has filled with condensate and the capacitive level sensor **6** signals at the maximum point, the solenoid valve is energized and the area above the valve diaphragm is vented. The valve diaphragm lifts off the valve seat **7**, and the pressure in the housing forces the condensate into the discharge pipe **8**.

The BEKOMAT® electronic system now calculates the discharge rate down to the minimum point and uses this figure to determine the exact valve opening period required. The valve will again be fully closed and leakproof before any compressed air can escape.

Should the condensate discharge fail to function properly (blocked discharge pipe, faulty diaphragm), the device will change to the alarm mode after 60 seconds. In this case, the red LED flashes and, if desired, the alarm signal is relayed via a potential-free contact. While in the alarm mode, the solenoid valve will open every 4 minutes for a period of 7.5 seconds. This ensures that a BEKOMAT® unit filled in an unpressurized state will, under pressure, automatically revert to normal operating conditions and thus clear the alarm.

From the BEKOMAT® the condensate can flow for treatment into the ÖWAMAT® or QWIK-PURE® oil-water separator which is designed to deal with condensate contaminated with free and dispersed non-emulsified or emulsified (QWIK-PURE® only) oil. In the case of stable emulsions, our BEKOSPLIT® emulsion splitting plant will clean up the condensate leaving only a minimum of waste for disposal. Either system will help your company to conform to the legal requirements concerning the treatment & discharge of compressed air condensate.

## TECHNICAL INFORMATION AND DATA

### STANDARD BEKOMAT® SELECTOR CHART



### COMPRESSOR PERFORMANCE

Compressor HP	Compressor SCFM	After Cooler	Wet Receiver Tank	Pre-filter	Refrigerant Dryer	After-filter	Dry Receiver Tank
20	90	31	31	31	31	31	31
40	180	32	32	31	31	31	31
50	225	32	32	31	32	31	32
60	270	12	13	31	32	31	32
75	338	13	13	31	32	31	32
100	450	13	13	31	32	31	32
125	563	13	13	31	12	31	13
150	675	13	13	31	13	31	13
175	788	13	13	31	13	31	13
200	900	13	13	31	13	31	13
250	1125	13	13	32	13	32	13
300	1300	13	13	32	13	32	13
400	1800	14	14	32	13	32	13
500	2250	14	14	32	13	32	13
750	3375	14	14	13	14	13	14
1000	4500	14	14	13	14	13	14
1250	5625	16	16	13	14	13	14
1500	6750	16	16	13	14	13	14
1750	7875	16	16	13	14	13	14
2000	9000	16	16	13	14	13	14
2500	11250	16	16	13	16	13	16
3000	13500	16	16	13	16	13	16
4000	18000	16	16	14	16	14	16
5000	22500	16	16	14	16	14	16

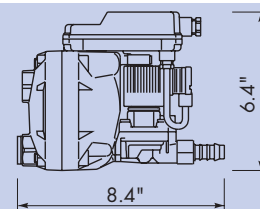
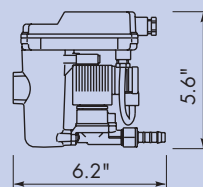
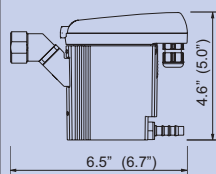
**For extremely corrosive applications where excessive rust, scale or particles are present please contact your BEKO representative for special installation instructions.**

# BEKOMAT®

## TECHNICAL INFORMATION AND DATA

### STANDARD BEKOMAT® MODEL RANGE

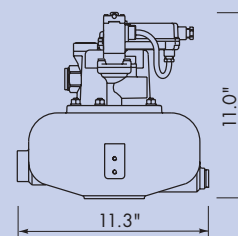
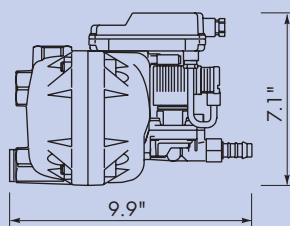
Model		31	32	12	12 CO	12 CO PN63	13	13CO	13 CO PN50
Maximum flow rate	scfm	100	225	280	280	280	1300	1300	1300
Working pressure (psig)	min.	12	12	12	12	12	12	12	12
	max.	232	232	232	232	915	232	232	725
Weight (lbs)		1.8	2.2	1.8	1.8	2.0	4.4	4.4	4.4
Min. / max. temperature	°F	+34 / 140	+34 / 140	+34 / 140	+34 / 140	+34 / 140	+34/140	+34/140	+34/140
Connections	Inlet	1x 1/2"	1x 1/2"	1x 1/2"	1x 1/2"	1x 1/2"	2 x 1/2"	2 x 1/2"	2 x 1/2"
	Outlet (Hose connector) (Hose di)	1x 1/4" 3/8"	1x 1/4" 3/8"	1x 3/8" 1/2"	1x 3/8" 1/2"	1x 3/8" 1/2"	1 x 1/2" 1/2"	1 x 1/2" 1/2"	1 x 3/8" 1/2"



Model		14	14 CO	14 CO PN25	16 CO
Maximum flow rate	scfm	5400	5400	5400	50000
Working pressure (psig)	min.	12	12	12	12
	max.	232	232	360	232
Weight (lbs)		6.4	6.4	4.4	13.0
Min. / max. temperature	°F	+34 / 140	+34 / 140	+34 / 140	+34 / 140
Connections	Inlet	3x 3/4"	3x 3/4"	3x 3/4"	2x 3/4" 1 x 1"
	Outlet (Hose connector) (Hose di)	1x 1/2" 1/2"	1x 1/2" 1/2"	1x 3/8" 1/2"	1x 1/2" 1/2"

#### PRODUCT CODE KEY

CO	hard coated for gas applications
PN ...	high pressure PN 25 – 360 psig PN 50 – 725 psig PN 63 – 915 psig



For dimensional drawings, operating instructions and detailed information about each drain model go to [www.bekousa.com](http://www.bekousa.com). We will also be happy to provide you with information about our large range of special BEKOMAT® models. Just get in touch with us.

**BEKO**

**HIGH-QUALITY COMPRESSED AIR**

**BEKOMAT®**

The convincing concept for condensate discharge

**ÖWAMAT®**

Clean & safe oil-water separation. Super efficient with OEKOSORB® replacement filters

**BEKOSPLIT®**

Splitting plants for the reliable, economic and environmentally friendly treatment of emulsions

**DRYPOINT®**

The complete product range for compressed air drying: refrigeration dryers, adsorption dryers, membrane dryers

**CLEARPOINT®**

Flow-optimized, reliable filters and water separators for compressed air and industrial gas

**BEKOBLIZZ®**

Optimized cooling processes using deep-cooled, dry compressed air



**BEKO TECHNOLOGIES CORP.**

236 Raceway Drive  
Suite 1  
Mooresville, NC 28117  
USA

[www.bekousa.com](http://www.bekousa.com)

Phone (800) 235-6797  
Fax (704) 663-7467

[beko@bekousa.com](mailto:beko@bekousa.com)



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