BERGMANN
Machines for
Waste Management

BERGMANN
APB 606

Genuine since over 40 years

Long lasting experience

Bergmann develops and produces since over 40 years maschines for the waste management. Target was and is has been to reduce the transport costs by developing machines with highest and most effective compaction as well as to have **easy handling and lowest maintenance costs**.
All products are ideas and conceptions of our own construction department. Particular attention has ever been paid on long lasting and robust design. Therefore Bergmann machines achive quite often a lifetime of more than **20 years**.

Safe technology

Due to decades long experience and with the help of the customers the Alpha-Press-Bin APB 607 has been enhanced more and more.
The machine fulfils the European-Safety-Guideline and has additionally voluntarily **TÜV and GS** approvement.

Different examples of use

Wether feeded by ramp (possible due to the optional double-sided hooks), via integrated bin-lifter with bins or if feeded from ground on public sites. The APB nearly always finds its application.
In the following some examples of accessories are listed.

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Technical details

Pendulum roof—Emptying help

On traditional self-press-container there are very often problems with emptying of cardboard and plastic foil, even if not high compacted.
Reason for this is not only the character of the material but even the low cost construction of many containers. The consequence is much emptying time by frequent start and shake via the truck until the material comes out. Furthermore truck and compactor are highly worn by this treatment.
The APB 606 avoids these problem by a pendulum roof that has especially delevoped as an emptying help. This free hanging roof gives additional space for the material when the container is tipped and so any clamping of the material will be avoided.

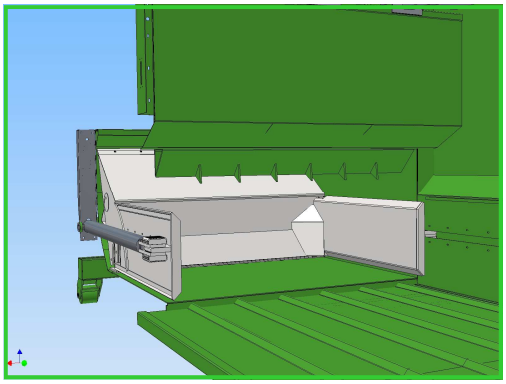
Ease of maintenance

The easy accessible and clearly arranged hydraulic aggregate simplifies all necessary maintenance and repair work.

Galvanized fittings

Movable and often used operating elements must be robust and fully functional. Therefore all fittings and lockings are weatherproofed galvanized.

Technical details



Linear compaction

The linear direction of the hydraulic cylinders effects a 100% transmission of power on the compaction material and therefore achieves highest compaction results.
In comparison to cross-cylinder presscontainer the APB 606 gives a 20-25% advantage from this point of view.

The Alpha-Pack-Bin is a mobile presscontainer that uses Roll-On-Off vehicles for transportation. The Bergmann principle with the overthrow blade compacts cardboard and reuse material on a very high efficient way.
Cleaning work underneath the compaction blade is not necessary due to self cleaning equipment. Because of this there are no cleaning costs.
Furthermore the full volume of the compaction chamber is available in every step of the compaction cycle which is also different to cross-cylinder models.

The following photos are showing the working principle:

Bild 1

Bild 2

Photo 1 shows the compaction blade in back position. Compaction material can be thrown in now and during the whole compaction cycle.

Photo 2 shows the compaction blade in forward motion. The blade moves the material towards the container and compacts it. Material can be thrown in at any time as the yellow box shows.

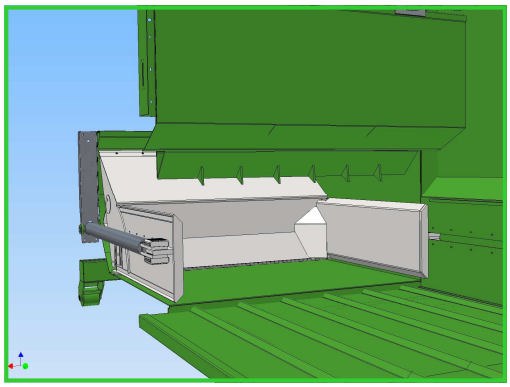
Bild 3

Bild 4

Photo 3 shows the compaction blade at the end of the backward motion. The overthrow blade undermines the material –the yellow box– and throws it in front of the press blade.

Photo 4 shows the compaction blade moving again forward. The compaction cycle has been completed.

Technical details



Self cleaning press piston

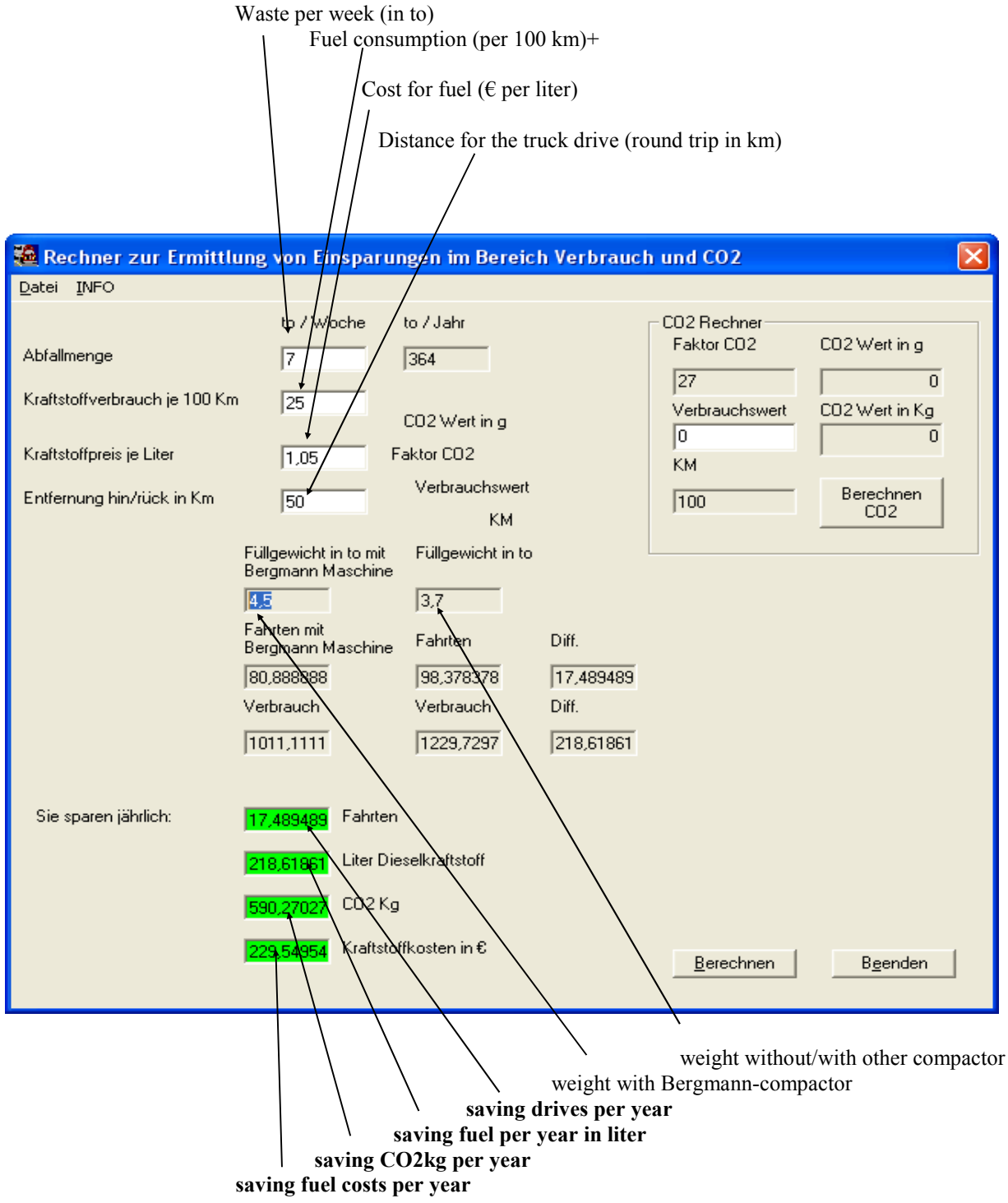
Conventional compaction systems of self press container need regular cleaning.
If this weekly 15-20 minute work is not done regulary or is totally ignored high expensive repair costs can be generated. But not only the expenditure of time but else the danger for the healthy is a criterium for the decision. Especially in winter times with the effect of the weather with liquids of rain water and snow the cleaning work on these machines is not up to date.
All these efforts and costs are not present at the Bergmann compaction system.
Cleaning work behind or under the press piston is simply not necessary.

Efficiency in all ranges

Problem-free and fast emptying because of the pendulum roof. Longer standing times (the APB 20qm achieves approx 500-1000 kg more compaction weight as conventual presscontainer)so the machine needs less frequent emptying.
This together with the abcense of cleaning costs saves a hughe amount of costs.

Economisation of CO2kg with ONE BERGMNANN-Compactor

The calculation with these data (4,5 to 3,7 to) are developed in cooperation with a customer of Bergmann. He uses more than 200 Bergmann machines. The weight (4,5 to) is the average weight achieved with all Bergmann compactors in this supermarket chain. The weight (3,7 to) is the average of the compaction result from different compactors (other products) before the customer use the Bergmann-APB 606! The values used for this calculation are not theoretical but from practical experience!

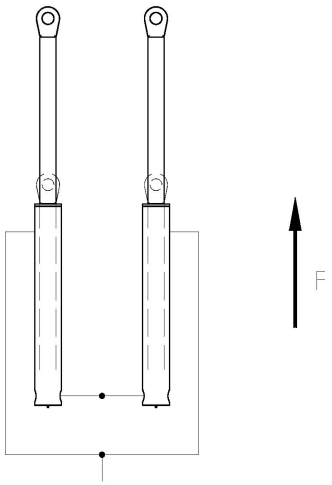


Comparison between the pressure force of Bergmann linear cylinder and the cross over piston of competitor

Assumption: both cylinders do have have a nominal pressing force of 31 tons

Bergmann linear cylinder

The force F of cylinder forward movement remains the same during the complete compaction stroke and is always 100% as the force is taking effect in only one direction.



Calculation:

p = F/A → F = p*A

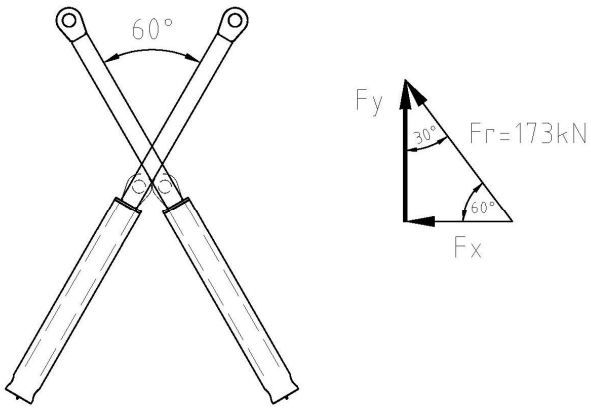
F = 200 bar* ((π*100² mm)/4)
= (200*0,1)N/mm² *((π*100² mm)/4)
= 157079 N
= 157 kN per cylinder

~ 314 kN totally for 2 cylinder

F_r, in forward direction is therefore 31,4 to

Cross-over piston

The force of cylinder forward movement is minimal in rest position. It increases when cylinders are moving into end position, but the force will never reach 100% as a part of the force is not going in front direction but to outside position and therefore cannot be used.



Calculation:

$F_x^2 + F_y^2 = F_r^2$

$\cos 30° = F_y / F_r$ → $F_y = F_r * \cos 30°$

F_y = 157 kN * cos30°
= 136 kN per cylinder

~ 272 kN totally for 2 cylinder

F_y, in forward direction is therefore 27,2 to

Totally this results in a loss of 4,2 tons not used compaction force (approx. 15%) by using an ineffective compaction system.

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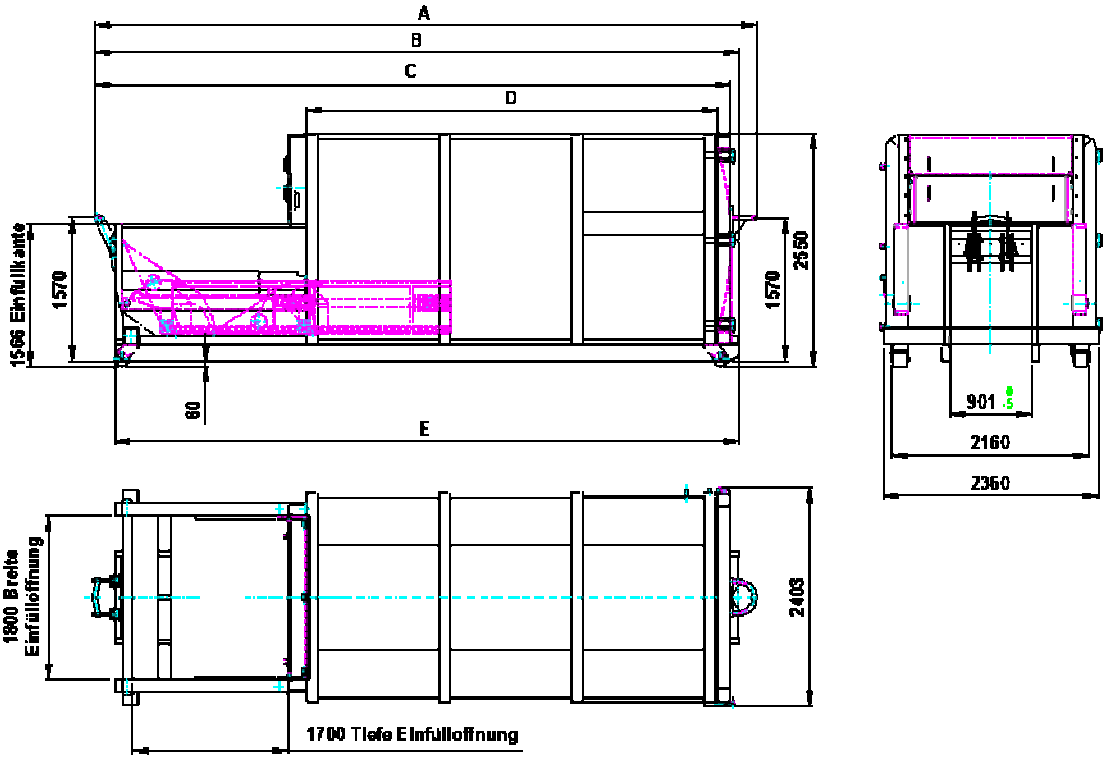
Technical details

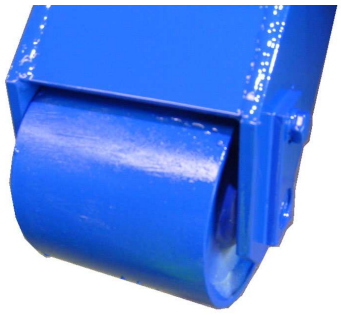
Drive	Integrated single-stage hydraulic aggregate via E-Motor 400 V, 50 Hz
Drive capacity	5,5 kW
Clock cycle	35/36 sec. for forward and return cycle (double pump: 20/21 sec.)
Displaced volume	ca. 2,0 m^3
Press chamber volume	ca. 4,5 m^3
Hook bracket	Both sided, front movable with variable height. Back fixed
Rollers	Plastic rollers front and back.
Backdoor	Side hinged, 3-point-central-locking

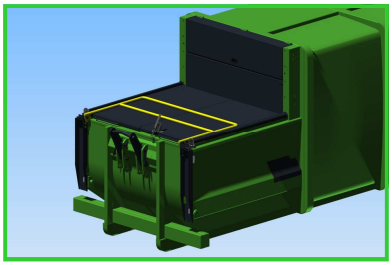
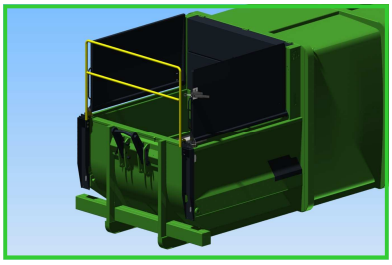


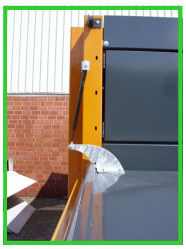
Type	Cubic capacity [m³]	Operating pressure [bar]	Theoretic cylinder thrust [kN]	Theoretic force at the blade [N / cm²]	Empty weight [kg]	" A " [mm]	" B " [mm]	" C " [mm]	" D " [mm]	" E " [mm]
SN / 14	14,6	200	314	27,2	4.770	5.905	5.720	5.630	3.110	5.490
SN / 18	17,5	220	346	30,0	4.920	6.505	6.320	6.230	3.710	6.090
SN / 20	20,3	220	346	30,0	5.150	7.105	6.920	6.830	4.310	6.690
SN / 23	23,0	220	346	30,0	5.410	7.705	7.520	7.430	4.910	7.290

Accessories

EDV-Code	Description	Scope of delivery
20000101 	**Special hooks - rear 1425 mm high** The front plate is to be welded on approximately 25 mm deeper and the hook is to be mounted in the lower position. The rear hook can be screwed on and is provided with a centring device.	special hooks - rear, painted in RAL 7016
20000102 	**Special hooks - rear 1450 mm high** The rear hook can be screwed on and is provided with a centring device. The front hook must be mounted in the lower position.	special hook - rear, painted in RAL 7016
20000530 20000531 	**Rollers - 300 mm wide** Robust front rollers, connected to the compaction area. 300 mm in width instead of 150 mm. The distance between the rollers is to be specified by the customer (see drawing *MB103RollerD*).	plastic roller w = 300 mm (2 units) roller carriage (2 units) various mounting materials

EDV-Code	Description	Scope of delivery
20000773 	**Steel rollers** The plastic rollers will be replaced by steel rollers of the same width (150 mm).	steel rollers (4 units)
20000776 	**Deflector plate for hook** A welded plate behind the hook avoids damages on the press section from the truck hook whilst driving backwards.	deflector plate steel parts
20000802 / 20000803 	**Additional pick-up system on both sides for roll-on roll-off vehicles with cable pick-up** A cable pick-up on both sides is possible from the front and from the rear via an additional hook. ***PLEASE NOTE:*** *Double stop bars are required should it be the case that the PACK-BIN is equipped with a bin-lift-tipping-device. This must be specified when the order is placed.*	cable hooks (4 units) switching runners (4 units)
20000836 	**Hydraulic 75% full signal** A yellow light illuminates on the operating keypad via a hydraulic signal which is activated by an oil pressure switch. This signals that the container is 75% full. The full signal for different fill-levels can be adjusted upon request by the customer.	oil pressure switch yellow signal light various electrical units

EDV-Code	Description	Scope of delivery
20000847 	**Hydraulic 100% full signal** A red light illuminates on the operating keypad via a hydraulic signal which is activated by an oil pressure switch. This signals that the container is 100% full. The full signal for different fill-levels can be adjusted upon request by the customer.	oil pressure switch yellow signal light various electrical units
20000822 	**Side walls + L-shaped cover + limit switch shutdown** Side walls are attached to the left hand side and the right hand side of the inlet opening. An L-shaped, torsion bar spring balanced cover with excentric locking mechanism and support pole close the inlet opening. Side walls and the L-shaped cover enable the machine to be operated even if the cover is closed. A limit switch turns the Pack-Bin off as soon as the cover is opened. ***PLEASE NOTE:*** *The L-shaped cover is not intended for use with machines equipped with a bin-lift-tipping-device, as the BLT-device can then not be retracted for transportation purposes.*	side walls left and right L-shaped cover with torsion bar springs with excentric locking mechanism and support pole limit switch with clamp fasteners all steel sheets painted in RAL 7016
20000828  	**Safety bar in the front** Safety bar over the filling area for the filling from ramp. The bar can be folded down for transport. Possible for one or two part lid.	safety bar fixing material

EDV-Code	Description	Scope of delivery
20000825  	**<u>Cover located over the inlet opening – attached at the rear</u>** The cover is produced from steel sheets which are 2 mm thick and is attached at the rear of the inlet opening. An excentric locking mechanism, a supporting rod with safety chain as well as a rubber stopper are part of the cover. Two gas strutts facilitate the opening of the cover. An additional bracket is required for the supporting rods if the cover will be opened to an angle of 90°. Please specify this when placing an order.	cover gas powered springs (2 units) excentric locking mechanism rubber stopper supporting rod with safety chain fasteners all steel sheets painted in RAL 7016
20000826    	**<u>Two-part cover – attached on the left hand side and the right hand side</u>** Both halves of the cover come equipped with a gas strutts each in order to facilitate the opening of the cover and also come with a supporting rod each. The rubber buffers serve as an end stop. The covers are locked into position with a excentric locking mechanism which ensures the safe transport. The covers can also be ideally used as a side wall height extension.	cover – left hand side and right hand side with supporting rod and gas powered spring plastic mounted, galvanised joint rubber buffer excentric locking me chanism all steel sheets painted in RAL 7016

EDV-Code	Description	Scope of delivery
20000824 	**Side walls – attached on the left hand side and right hand side over the inlet opening** The high side walls are made up of two side walls, each made from steel sheets which are 3 mm thick. The walls are approximately 650 mm in height. An L-shaped cover can be retrofitted at any time.	side walls – left hand side and right hand side fasteners all steel sheets painted in RAL 7016
20000823 	**Funnel located above the inlet opening** The funnel which is located above the inlet opening is made up of two side walls as well as a front wall. These walls are each made out of steel sheets of 3 mm in thickness. The funnel is approximately 650 mm in height. A cover can be retrofitted at any time.	side walls – left hand side and right hand side front wall fasteners all steel sheets painted in RAL 7016
20000869  	**Additional remote control with 5 metre-long cable** In addition to the standard operating keypad, you will receive a separate keypad including a metal protective housing and a 5 metre-long cable. The keypad will be connected to the machine via a 16-pin plug. The machine can then be operated via both keypads.	operating keypad robust metal protective housing painted in RAL 7016 5m-long extension cable including protective piping multi-way plug socket electrical accessories

EDV-Code	Description	Scope of delivery
20000861   	**Integrated bin-lift-tipping-device 800 for bins with pinion pick-up and comb lift** With this BLT bins with pinion and comb lift can be lifted, tipped and emptied. It is possible to tip bins with different comb heights. The BLT can be used to tip bins with a pinion height of 1260mm (according to DIN EN 840) or bins with a comb height of 980 to 1280 mm. The maximum load carrying capacity amounts to 700 kg. Due to safety reasons the operation of this device is to take place with both hands via a keypad. ***PLEASE NOTE:*** *It is also possible to empty containers with a swing cover. However this only functions in combination with cover openers sales number 22000865 or sales number 22000870.*  	tip frame with chute two hydraulic cylinders electromagnetic valve operating keypad various electrical units
20000865  	**Cover opener for wheele bin with machine with cover** This mechanical cover opener is intended for the 1.1 m³ wheelie bin with swing cover as according to the DIN 30700 regulation. This enables the container cover to be automatically opened and closed during the tipping process.	mechanical cover opener fastening chain painted in RAL 7016

EDV-Code	Description	Scope of delivery
51882000, 51883000, 51884000, 51885000, 51886000, 51887000 	**Guiding rails** The guiding rails are suitable for centring roll-on roll-off container or compactors on a flat and solid ground as e.g. concrete. The ground will be protected from damages. The rails of container or compactor have to be min. 180mm high. Different lengths are available: 4.500mm, 5.300mm, 5.500mm, 6.000mm, 6.700mm, 7.200mm. The guiding rails are painted in RAL 7016 „antracite grey“.	Set of guiding rails
50000899 	**Special paint** The machine will be painted in any user-defined RAL colour.	RAL-tone

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