BERGMANN
Machines for
Waste Management

Eine BERGMANN Erfindung

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APB 1620

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Original since 50 years

Long lasting experience

Bergmann is developing and producing maschines for the waste management since 50 years . 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 CE.

Different examples of use

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

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Technical details

Container construction

Main issue on the Bergmann self-press-container of the APB 1620 series is highest strength with lowest own weight. The construction design based on a double conical bin in direction to the discharge door and to the top of the container. This construction of the container ensures an easy emptying.

Ease of maintenance

The easy accessible and clearly arranged hydraulic aggregate simplifies all necessary maintenance and repair work.
NEW! The hydraulic aggregat is extricable. Maintenance and repair work can be done outside of the compactor. The main-switch and motor proetcion-switch are outside and can be activated directly from the operator in the rare case of an malfunctioning.

Galvanized fittings

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

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Technical details

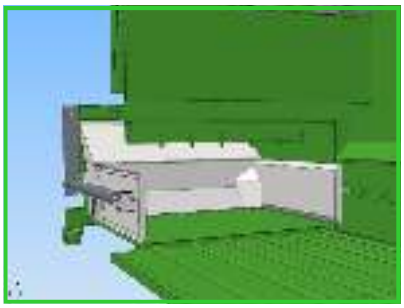

Bild 1 **Bild 2**

Bild 3 **Bild 4**

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 1620 has **15% advantage** from this point of view.

The Alpha-Pack-Bin is a mobile presscontainer that needs Roll-On-Off vehicles for transportation. The Bergmann principle with the overthrow blade compacts cardboard and reusable material in a very high efficient way.
Cleaning work underneath the compaction blade is not necessary due to the self cleaning equipment. Therefore cleaning costs simply do not incur.
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:

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.

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.

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Technical details

Discharge door and closing system

The discharge door of the APB 1620 is ihinged on the left hand side in compaction direction.
The galvanizid ratchet is approx. 1.700m long in serial and mounted on the right hand side in compaction direction.

Hook

The hook at front side is foldable and also adjustable for two heights (1.450mm and 1.570mm).
The APB 1620 is equipped in serial with 4 plastic rollers W=160mm (two at rear side, two at front side).
The hook at rear side is installed in height between 1.450mm and 1.570mm and is only for shunting (NOT FOR TRANSPORT) and equipped with a centering.

OPTIONAL! Hook for transport

Optional the APB 1620 can be equiped with foldable hook at rear side for transport.
This option has to be checked with the lift system of the truck.

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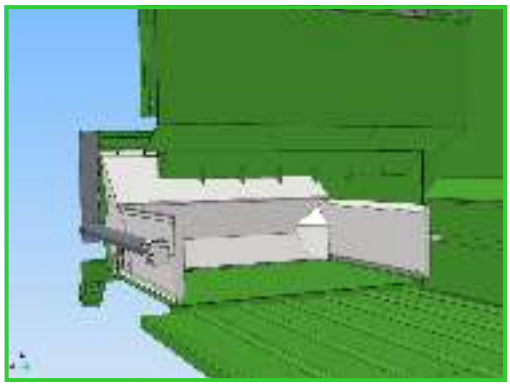
Technical details



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 also 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 necessary.
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

Because the APB 20qm achieves approx 500 kg more compaction weight as conventual presscontainer the machine needs less frequent emptying.
This conjunction with the abcense of cleaning costs saves a hughe amount of costs.
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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

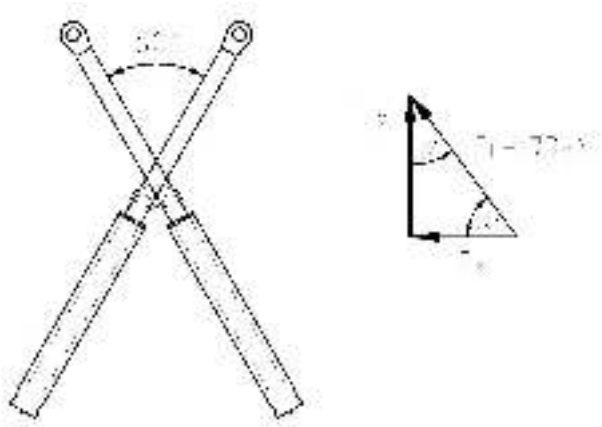
F = 200 bar* ((π*100^2 mm)/4)
= (200*0,1)N/mm^2 *((π*100^2 mm)/4)
= 157079 N
= 157 kN per cylinder

~ 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:

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

cos30° = F_y / F_r → F_y = F_r *cos30°

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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