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The Next Generation Crush or be Crushed

*Facilities will benefit
from advances
in compactor technology*

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Waste handling is a vital, yet often unpleasant, task that every commercial and industrial facility must deal with. Trash compactors have been instrumental in refuse disposal for decades, yet many machines still prove ineffective and unreliable. However, recent innovations in compactor technology should greatly enhance facility waste reduction efforts and reduce operating costs.

Compactors were first introduced in the 1960s to reduce the volume of waste developed at large industrial concerns. The idea was basically to place refuse into a chamber that would then push the refuse into a large container that was attached to the compactor and could be unattached and loaded onto a truck and sent to a land fill for disposal. The ram that pushes the refuse into the detachable container typically penetrates the container opening from 6 to 12 in. This means that nothing is compacted until the unit has been run through as many as 100 charges. Not until then—when the container is full, but loose—does the machine start to compact the refuse inside the container. The user may be able to put another 300 or so charges into the compactor before the unit is actually full.

This was a great improvement over just throwing the refuse into an open container, and it also gave the customer a sanitary place to store the refuse between pickups. Still, this 4 to 1 reduction in volume was often not enough for bulky items that would not compact, and the cost of disposal continued to increase.

Manufacturers struggled with the development of add-

on equipment to precondition bulky items, as well as innovative pieces of new equipment to meet customer demands. These recent designs are capable of providing customers added waste reduction from 4 to 1 to as much as 10 to 1, which provides considerable cost savings.

First, Seabright Products, Hopkins, MI; S.P. Industries, Hopkins, MI; and Marathon Equipment Co., Vernon, AL; developed an add-on piece to the compactor called a guillotine precrusher. These machines achieved an additional reduction in waste volume by hydraulically dropping a steel plate at the open end of the charge box between the compactor and the detachable container. Anything placed into the compactor was first crushed as the ram moved forward against the steel plate that was lowered in front of the opening. After crushing, the plate was lifted out of the way and the "precrushed refuse" would then be pushed into the container as any standard compactor would do. Both Seabright and S.P. have continued to develop the guillotine precrusher and now offer units with the guillotine built into the compactor as opposed to an add-on piece of equipment.

Other companies such as Blower Application Co., Germantown, WI, and Marvin Engineering Corp., South Holland, IL, have solved the problem by adding shredders above the charge opening of standard compactors in order to precondition the refuse prior to compaction.

The shredder is a series of blades sent in two rows that mesh with each other, one turning clock-wise, the other counter-clockwise. Most items are torn apart prior to dropping into the compactor chamber.

Marathon Equipment has introduced a combination auger compactor. The V-shaped hopper above the compactor is equipped with a tapered screw/auger that continually turns — pre-conditioning the refuse and feeding the same into the compactor.

The Glosser Co., McKeesport, PA, has created a gateless precrushing compactor that accomplishes the precrushing with a patented stepped press head and reinforced precrushing chamber. The precrushing portion of the compaction cycle occurs in the top half of the charging chamber. While the precrushed cycle is active, the lower press head compacts the already preconditioned waste into the receiver container. Since the design eliminates the guillotine and associated equipment, the cost is not much more than that of a standard compactor, which makes these machines viable for a much larger market.

All of the products mentioned above should have a dramatic effect on the way waste disposal is handled at industrial and commercial facilities. These machines are of great benefit because they:

- dispose of pallets, steel drums, crates, appliances, and other items that previously required special handling.
- reduce theft by destroying items that could be recovered prior to disposal or prevent defective products from being recovered at a land fill, and then returned to stores for credit.

Despite the challenges associated with high-volume waste disposal, compactor manufacturers are staying one step ahead by combining technology and ingenuity to create viable solutions for facility managers.



These photos demonstrate the operation of the gateless precrusher pictured above.