

The Incredible Trash Eating Machine



Garbage Collection: The Way It Is

In most municipalities today, garbage collection hasn't changed much since 1900. The householder puts his garbage in a can. He places the can beside the street or the alley. The can is then picked up and dumped by the municipal garbage crew. This system is unpleasant for everyone involved. Loaded cans can be extremely heavy and difficult to handle, not only for the householder, but for the collector as well. The cans are unpleasant to look at and unpleasant to smell. The collector is put in direct contact with the garbage and endangered by working around heavy loads and the moving truck. Finding permanent employees for this unpleasant and high-accident-risk job is becoming more difficult each year. The system even stinks economically because the municipality has to bear the expense of a three man crew for every truck.

The Way It Should Be

The MBR system is pleasant for everyone involved. The householder seals his garbage in bags.

He places the bags in the usual place—a much easier task than manhandling heavy cans. The bags are not as unpleasant to look at as cans and the unpleasant smell is sealed inside. The sanitation engineer never has to come in direct contact with the garbage or risk injury because the MBR does everything mechanically. Finding permanent operators becomes much more probable. And the MBR system has the sweet smell of economy because it requires only one operator per truck.

What Is the MBR

The Mechanical Bag Retriever is a modified truck fitted with a hydraulically operated pick-up arm and basket controlled by the driver from inside an air conditioned cab.

It was developed by the Plastics Division of Gulf Oil Chemicals Company as a system to improve the efficiency of municipal solid waste collection and storage. The MBR utilizes a standard truck chassis with a modified cab and side loading packer box. The right 40% of the tilt cab has been removed in order to place a conveyor belt in its place. The truck also has an auxiliary engine and a hydraulically operated boom. The boom rotates over 210 degrees with a reach of 21 feet. The basket on the end of the boom rotates, opens and closes hydraulically. The boom, basket, and packing mechanisms are all operated by the MBR driver. The chassis is equipped with an automatic transmission, power steering, power brakes and air-conditioning. This equipment allows the MBR operator to drive his vehicle on residential streets and collect bagged refuse from both curbs. The auxiliary engine allows the packer unit to pack while the truck is in motion. The hydraulic boom is constructed so that it can return the filled basket to the conveyor and unload



the bagged refuse *automatically*; this allows the driver to proceed to the next stop while the boom returns to the conveyor, thereby minimizing collection time.

How Much Does It Cost?

About ten cents per bag collected at a minimum of 200,000 bags per year for five years. Many cities can operate well below this level with proper implementation. The cost covers the NSF approved polyethylene bags delivered to the city warehouse, a public relations program to instruct the community on the new system and effect a smooth community transition, a complete operator training program, and a maintenance training



program for service personnel.

The lessee or owner provides normal service for the truck, supplies the operator, the fuel and the parts replacements. The cost of operating the truck should be no different than operating a regular collection vehicle of similar size. We prefer to build the MBR on a chassis of a quality truck manufacturer and utilize a quality compactor box.

Who Stands Behind the MBR?

The innovative MBR system carries a one year warranty and is backed by the developers at Gulf Oil Chemicals Company. The chassis, compactor and major components are backed by the manufacturers.

How Much Can It Save Us?

As much as 30% of what you're spending on garbage collection now. That's what typical cost comparison figures indicate that a municipality can expect by using the MBR—and that includes the cost of providing the plastic refuse bags free to the citizens.

How Good Are Plastic Bags?

Excellent in convenience, strength, and ecological soundness. It has been found that householders are almost



unanimous in their approval of plastic bags. Approximately 40% of American households now use bags on a voluntary basis. Householders are aware of their cleanliness, convenience and low cost. The few occasional objections to plastic bags involve poor strength and their ecological relationships. The MBR System-recommended plastic bags meet or exceed the strength requirements set by the National Sanitation Foundation (NSF). The MBR's basket is designed to pick up as many as four or five bags at one time. Occasionally, bags will be pinched where the basket closes around them; but because polyethylene is highly extensible, the bags expand until the air pressure causes a small rupture. The bags are then relieved of their stress and very rarely open enough to drop refuse on the street. Should this occur, the driver simply picks up the refuse with the basket or stops the truck and manually loads the refuse.

In terms of the environment, it should be pointed out that plastic bags are more desirable than a great many other packaging materials, thus the Environmental Protection Agency (EPA) supports their use.

Plastics are basically inert; when disposed in sanitary land fills they will remain as solid filler; most of the solid wastes disposed eventually decompose to gases and liquids. After other materials decompose the space occupied by the formerly solid matter caves in, causing settling of the fill. Plastics, glass, dirt and the few other classes of inert wastes contribute stability to the fill, allowing the land to be more readily reclaimed for recreational purposes or farming. Polyethylene bags are ideal if the community disposes of its solid wastes through incineration. Polyethylene is completely combustible and burns to form harmless carbon-dioxide and water; it is an excellent fuel source for the incineration process, and aids in its operation and is non-polluting. Polyethylene, being a thermoplastic, is recyclable as well. At the present time, recycling plastics, like most other materials, is more expensive than producing new products from the natural raw materials. Land fills make ideal storage for plastics and other inert materials; because polyethylene is inert, it is thus possible that it can be reclaimed at any time in the future.

Use of plastic bags also helps prevent spillage and blowing paper and reduces or holds in check the fly population.



Is the MBR Hard To Operate?

No. The operator need only have skills equivalent to a truck driver or an equipment operator. After only a few days of operating the MBR, he becomes proficient enough to handle the hydraulic boom and basket in a safe and efficient manner.

The control handle inside the cab is connected hydraulically and electrically to the activators that govern the movements of the basket and the boom. By moving the control handle in the same manner as an aircraft control stick, the MBR operator is able to direct the boom to either curb, reaching as far as twenty-one feet. The operator controls the basket position, the open and close functions and the automatic return and drop functions with his right hand.

The conveyor belt operates continuously, moving the bags into the packer box. The cab is equipped with a sweep cycle and a pack cycle switch allowing the operator to sweep the bags to the rear every half dozen houses; packing is done about every dozen houses. Both sweep and pack cycles can be completed as the truck travels between houses. The 20 yard packer box is capable of holding about ten thousand pounds of bagged refuse. The MBR normally collects all the refuse from a route of 140 to 200 households in one hour.

How Safe Is the MBR?

For the community: The MBR's boom is constructed to have a maximum height of 13'8", thus eliminating concern for wires, bridges, and most trees. The operator is capable of easily positioning the basket over any refuse bags he can see. His eye level is about eight feet, thus he has good visibility on both sides of the MBR. The boom can reach over parked cars with plenty of room to spare. The basket is designed and constructed so as to avoid damage to lawns or any other surface from which garbage is to be retrieved.

For the operator: Injuries sustained from standard garbage collection operations are among the most frequent of injuries in the nation. This not only means downtime for employees, but is also a source of numerous and costly legal damage suits against municipalities. The MBR operator does his job from inside the truck's air conditioned cab, away from all the usual hazards of standard garbage collection.

How Efficient Is the MBR System?

Super efficient. The MBR operator is effective 100% of the time until the route is complete and the truck is emptied. No wasted manpower of extra crewmen is spent on trips to the land fill with collections. The size of MBR routes can be increased to keep the operator busy on light days, while on heavy days the one operator can work overtime for a few hours if necessary or be

relieved by a second operator. Using this system it is possible to economically increase the households on a collection route. The MBR operates equally well in rain, snow, and other unpleasant weather. The MBR can be operated at night. Because only one man is involved, occasional overtime expenses are reduced for special collection tasks. The one-man crew provides reductions in manpower costs, fringe benefits and labor problems.



What About Other Types of Garbage?

The MBR is designed to handle plastic bags, but is capable of retrieving other parcels of garbage. In the event that the operator encounters garbage that cannot be retrieved mechanically, he simply steps out of the cab and loads it manually onto the conveyor belt or through the side doors.

The MBR Garbage Disposal System:

- Reduces essential crew members from three to one.
- Eliminates hazardous working conditions for sanitation engineers.
- Upgrades function of operator.
- Cuts municipal garbage collection cost by as much as 30% or more.
- Is preferred by householders in terms of convenience and aesthetics.
- Includes programs for operator training, maintenance training and community public relations.



Any questions or comments? Call or write us today:

MBR Systems
Gulf Oil Chemicals Company
P.O. Box 2100, Houston, Texas 77001
713-226-2573



The MBR at work: garbage from the left side of the street...



is deposited on the conveyor belt while the arm reaches to the right side of the street,



scoops up more garbage and puts it away.



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