

Waste Handling Success: Not Optional

Outfitting your waste handler for success will lead to greater productivity, performance, durability and operator satisfaction.

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As seen in [Waste Advantage Magazine](#).

Waste handlers work in harsh environments that pose unique challenges to construction equipment – rather than working with materials that are consistent in nature (soils, aggregates, etc.), these machines toil in varied work environments with material that is inconsistent in size, substance and weight. That waste material can work its way into just about anything. As such, outfitting a waste handler with specific performance and guarding features can go a long way in providing optimal uptime, machine performance and operator satisfaction.

In this article, we will look at key features that will contribute to waste handling success. For some manufacturers, these features and components are optional; for others, these may come standard as part of purpose-built waste handling packages. Consult with your equipment dealer to determine the right package for you.

Guarding

Each specific facility will have different guarding requirements – for instance, while not standard on most equipment, some facilities will require side and rear window guards. A caged windshield guard is definitely recommended for the front of the machine to protect the operator from falling items. Other critical pieces of guarding to consider: metal-wrapped hydraulic hoses (preventing downtime causing damage) and material ejectors that protect cylinders and hoses from debris that would otherwise cause damage and downtime. Additional guarding for everything from the transmission and fuel tank to the lights is also available.

Solid Tires and Heavy-Duty Axles

Waste environments are murder on tires. Standard radial tires in waste applications are at severe risk of puncture and faster degradation. Solid tires come in both the slick (indoor) and treaded (outdoor) varieties. These tires are significantly heavier than their pneumatic counterparts, and therefore require a more robust axle design. That heavier axle design also offers an additional benefit when combined with solid tires: the machine can carry and work with significantly heavier loads. Additional rear counterweights can further increase operating capacity. Heavy-duty axles are also optimized with auto-locking front and open rear differentials for optimal traction and performance on the hard/packed surfaces these machines typically operate in.

Heavy Debris Cooling System

Given that these machines are often working with paper, cardboard and other clog-friendly materials, waste handlers typically require greater cooling capabilities than standard wheel loaders. As such, a heavy debris cooling system should be considered. These enhanced cooling systems often include wider fin spacing, reversing fans, self-cleaning covers and ejective air pre-cleaners – all designed to reduce the need for manual cleaning and resulting in lower engine temperatures.

Hydraulics, Couplers, Buckets and Attachments

The versatility of a waste handler can be further expanded with a selection of buckets and attachments. The “standard” bucket on a waste handler is typically a large capacity waste handling bucket with rubber cutting edge, but these buckets are available in a variety of shapes and sizes to meet specific applications. Waste handlers can be further supplemented with forks, grapples, clamps, material handling arms and brooms, etc. To simplify operation, a hydraulic quick coupler is recommended that allows the operator to easily switch between attachments without leaving the cab.

Similarly, auxiliary hydraulics are important to ensure full attachment versatility. Most waste handlers will come standard with a two-spool system, however a third spool can be added for specific attachments requiring a third function such as grapples, clamps or a broom.

Ride Control

Many waste handlers work in tight quarters, but there are applications that require extended material handling/carrying. These owners may choose to equip their waste handler with Ride Control, a feature that acts as a dampening system for the boom arms. As the machine travels over bumpy and uneven surfaces, the arms are able to stay relatively stable, minimizing spillage and providing a smoother ride for the operator.

Visibility Enhancements

Additional lighting packages are recommended to optimize visibility in all environments (especially those that work around the clock). Similarly, rearview cameras are recommended to give the operator complete visibility of their surroundings and optimize safety on the work site.

Cab and Controls

Joystick controls are available on most waste handler models. Joysticks generally make operation easier, help to reduce operator fatigue and simplify multifunctional operation. Many manufacturers will also provide a variety of seat options to provide the operator with a comfortable working environment.

Boom Configuration

The standard waste handler will typically come with a Z-bar linkage design, but two additional boom configurations provide additional benefits. An extended reach linkage allows waste handlers to reach, stack and dump at greater heights. An XT/tool carrier-style linkage is potentially more ideal for material handling/carrying applications as it holds the load steadily across the entire lifting path. The standard Z-bar linkage will provide the greatest force and power for attacking and digging out of a pile.

Telematics

There are a number of machine and performance-related factors that can be monitored by a telematics system. This includes maintenance interval tracking, machine health parameters (temperatures, pressures, etc.) and operator performance factors (engine load data, idle time, etc.). By tracking equipment in such a way, owners will be able to better plan maintenance activities and identify potential operation hazards before they happen and manifest into costly downtime events. Telematics also provides benefits in equipment security and identifying unauthorized use, which are not as prevalent in highly monitored waste facilities.

Telematics can be added as an optional service, while some manufacturers provide it as standard service with the purchase of a waste handler (such as CASE with its ProCare program).

These are just a few of the options that can optimize overall waste handler performance. For such a specialized and challenging environment, it may be worth considering each of these to get the most out of your investment.

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Sidebar: Tips for Fuel Efficiency

There are a number of features built into today's waste handlers that help improve fuel efficiency. A few things to consider:

Engine Technology: Of the primary Tier 4 solutions available, selective catalytic reduction (SCR) engines are optimized to create an efficient combustion process. Emissions are addressed as an after treatment, rather than recirculating exhaust gas back into the engine. The technology can actually improve performance because the engines breathe more freely, which in turn, results in significant fuel savings and a

more efficient use of the engine's power. There's no regeneration and no extra fuel being used to burn off particulate.

Know Your Modes: Wheel loaders and waste handlers are typically designed with a number of operating modes that best match machine output to the task at hand. Know how each of these modes affects work performance, and help lower fuel consumption by only using the power needed to perform the job.

Death to Idling: Engine idling is arguably the most wasteful activity a piece of heavy equipment can undertake. This can be addressed in a couple of ways: some machines come with an auto idle and/or automatic engine shutdown feature that helps minimize wasteful fuel use. A telematics system is also excellent for monitoring idle times and coaching operators on how to cut down on excessive idle times.

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