

PAYLOAD

TECHNOLOGIES FOR WHEEL LOADERS



CAT[®] PAYLOAD^{*} TECHNOLOGY

RAISE YOUR PRODUCTIVITY

*NOT LEGAL FOR TRADE

Cat[®] wheel loaders take on all kinds of tasks - loading, stockpiling, aggregate handling and more. Cat[®] Payload technologies provide on-the-go weighing to help operators hit exact targets, every time and avoid overloading, underloading or misloading of materials.



ACCURATE LOADING. FASTER. EASIER. SAFER. EVERY TIME.

Four ways Cat Payload delivers results for wheel loader applications:



REDUCE COSTS: SAVE ON TIME, LABOR, AND FUEL COSTS.



IMPROVE ACCURACY: PRECISE PAYLOAD TARGETS ELIMINATES OVER AND UNDER LOADING.



INCREASE OPERATOR EFFICIENCY: EXPERIENCED OPERATORS WORK MORE ACCURATELY THAN EVER, WHILE NEW OPERATORS CAN GET UP TO SPEED MORE QUICKLY.



ENHANCE SAFETY: PREVENT TRUCK OVERLOADING, WHICH CREATES HEAVIER AND MORE UNSTABLE LOADS, REDUCING BRAKING PERFORMANCE AND PUTTING THE DRIVER AT GREATER RISK OF TIPPING.



DEEP INTEGRATION

SIMPLE TO USE WITH ZERO GUESSWORK

Cat Payload technologies are deeply integrated into next generation Cat wheel loaders to provide operators a simple to use tool for precise loading. Payload can be installed as a dealer option, or upgraded to Advanced Payload for additional capabilities and features.

THE RIGHT TECHNOLOGY FOR ANY LOADING APPLICATION

Cat Payload for wheel loaders includes Standard and Advanced options to suit a range of application needs and operating budgets. Plus, the built in Assist features allow you to partially automate some operations for even more efficiency and productivity.

Compatibility varies by wheel loader model and availability varies by region. Contact your Cat dealer to discuss the best systems and options for your fleet, operators and applications.

PAYLOAD TECHNOLOGY

LOAD EVERY TRUCK RIGHT THE FIRST TIME



PAYLOAD

Cat Payload technology delivers precise bucket load information with on-the-go weighing, which helps prevent over or underloading. The low lift weigh and manual tip-off functions optimize the final bucket process and maximize efficiency.

ADVANCED PAYLOAD

Advanced Payload is a system upgrade that offers expanded features and capabilities. Tip-off assist adds automation to the final bucket process. Multitask mode tracks two loading processes simultaneously. Split mode allows for loading multiple bodies while tracking individual targets and grand totals. Add Dispatch for Loading* to integrate the loader into the scale house process.

*Subscription and Compatible Scale House Software Required

WHAT CAN PAYLOAD DO FOR ME?

- + Higher productivity from operators
- + Prevent over/under loading and reloading
- + Reduces unnecessary equipment wear & damage
- + Improves fuel efficiency, saves on fuel costs
- + Helps retain skilled operators
- + Avoid overload fines



HOW IT WORKS

ON-THE-GO LOAD WEIGHING

The Cat Payload system calculates material weight on-the-go by using data from sensors that measure bucket position and hydraulic pressure (certain features require the Advanced Payload system).

- + Automatic weighing provides estimated weights at low lifts (below weigh range) and scaled weights with the boom raised (through the weigh range).
- + Easily tip-off excess material on the last pass with real-time weight estimates for precise loading - eliminate under / over loading.
- + Bucket payloads are transferred to the truck cumulative payload weight as soon as an estimated weight is calculated. The bucket load is latched to the truck once the bucket is fully dumped.
- + View bucket payload and truck cumulative payload weight effortlessly from the touchscreen monitor.
- + Receive payload overload alerts when bucket loads exceed machine payload limits.
- + Operators can track daily production from the cab with quick access to truck weights, load and cycle counts, material movement, and daily totals - print truck payload tickets on optional printer.
- + Managers can view payload details and key performance indicators online to help manage the business - requires a VisionLink™ and Cat Productivity subscription.

PAYLOAD TECHNOLOGY BASIC OPERATION:

1. Warm up lift components for better weigh range accuracy.
2. Zero the empty bucket.
3. Set payload target weight (optional).
4. Load bucket with material.
5. Lift smoothly through the weigh range to generate a scaled weight (indicated by green box on display or audible alert).
6. Tip-off bucket (as needed) to remove excess material to meet target weight for the last pass.
7. After the last bucket pass, press store to save payload data to memory and update totals.

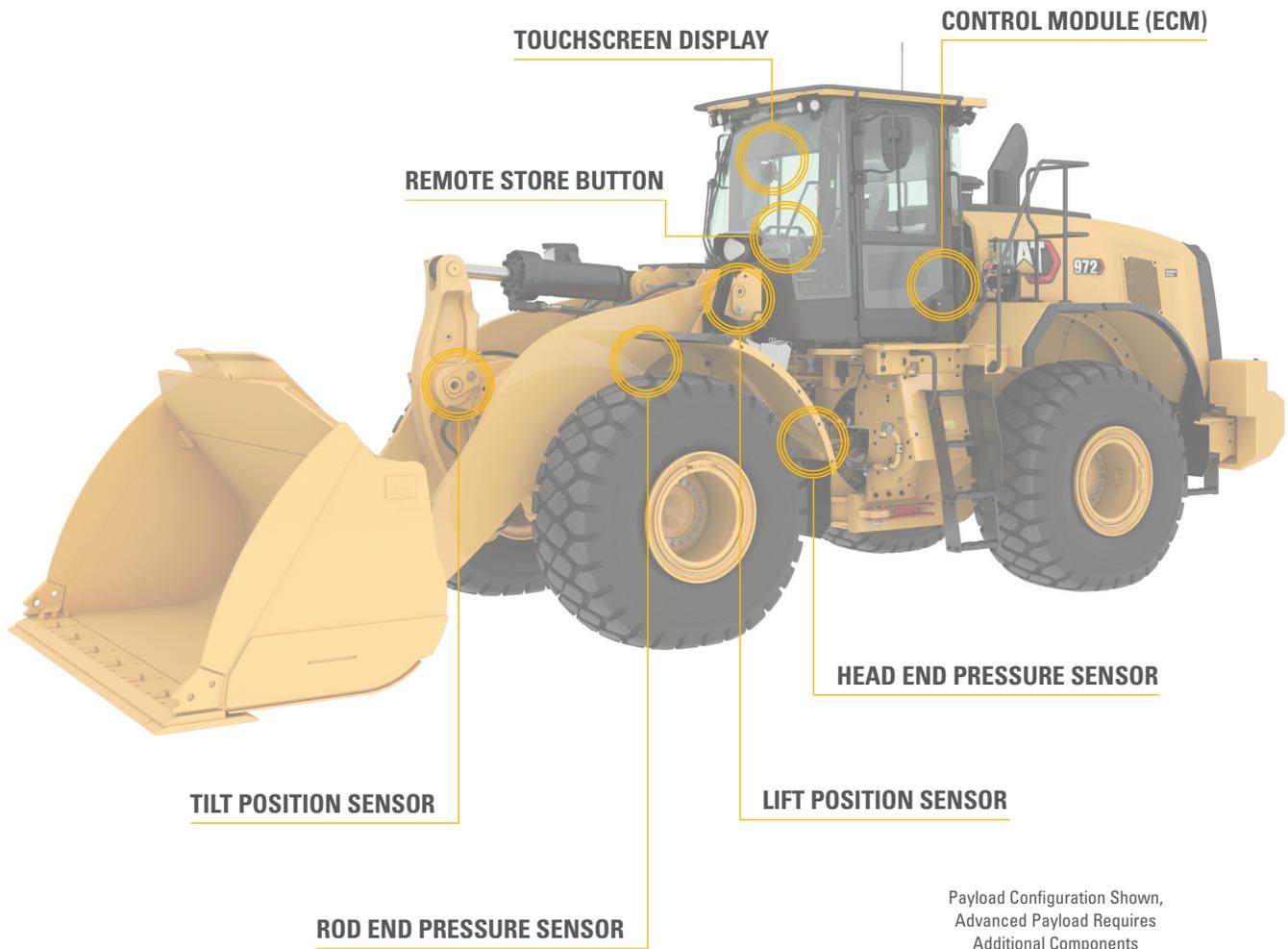


FASTER CYCLE TIMES

PAYLOAD TECHNOLOGY

MODULAR COMPONENTS, EASY UPGRADES

Cat Payload is a modular system that can be optimized and upgraded to meet the needs of a wide range of applications and site requirements. Features and availability may vary, consult your Cat dealer for model-specific information.



PAYLOAD

Payload is the standard system. Components are factory integrated with machine systems. This system comes installed from the factory on all new Cat wheel loaders.

ADVANCED PAYLOAD

Advanced Payload can be added at the factory or as an upgrade to standard Payload. Additional components include a dedicated high-resolution display, an additional control module, and sensors to enable expanded functionality.

PAYLOAD DISPLAY OVERVIEW



Advanced Payload Display Shown
(Display Can Vary By Machine Model)

Advanced Payload includes all of the standard features of Payload, plus the additional options outlined below:

PAYLOAD NAVIGATION MENU	
1	Menu Button - Accesses the Main Menu.
2	Bucket Weight - Displays the weight of material currently in the bucket. The green box occurs when the bucket is in the fully racked position and indicates scaled weight - the most accurate weight.
4	Bucket Zero Button - Zeros the current bucket weight.
5	Standby Button - Activates and deactivates the scale system.
6	Set Target Weight Button - Sets the target payload weight.
7	Target Weight - Displays the remaining weight needed to achieve the target payload.
8	Remove Last Pass/Clear Truck Button - Removes the last pass from the truck, or clears the truck if there was only one pass on the truck.
9	Tip-Off Enable/Disable Button - Enables/Disables the function - manual mode.
13	Current Truck/Body Weight - Indicates the number of passes in the current truck body.
16	Weight Units - Displays the unit of weight in use, can be switched between metric or imperial.

ADVANCED PAYLOAD NAVIGATION MENU	
3	Material List - Selects material type from a prepopulated list .
10	Multitask Mode - Tracks payload data and totals for two different trucks at the same time. When selecting a second truck, the payload data for the inactive truck is paused.
11	Split Mode - Splits a total weight into subtotals and a grand total.
12	Truck List - Selects a truck from a prepopulated list .
14	Total Vehicle Loaded Weight - Displays the total weight of the material loaded across multiple bodies.
15	Custom Lists - Creates, selects and manages up to 4 additional lists with information, such as customer name, order number, and site.

PAYLOAD WITH ASSIST

BOOST OPERATOR EFFICIENCY

Assist features on next generation wheel loaders add semi-autonomous functionality to boost operator efficiency. This system works with Payload and Advanced Payload, allowing you to optimize your loading applications.

AUTOMATED ASSISTANCE AVAILABLE

- + **Auto Set Tires** – Aids operators with proper digging technique by detecting pile engagement to reduce tire slip for longer tire life.
- + **Autodig** – Performs a full dig cycle for the operator. Upon detecting a dig condition Autodig will command lift and tilt functions to fill the bucket, then raises to kickout height.
- + **Programmable Kickouts** – Automates repetitive tilt, lower and lift functions to reduce operator fatigue, resulting in higher efficiency for greater productivity.
- + **Machine Speed Limit** – Allows operators to control the machines top speed which helps save fuel by limiting runout speed in load and carry applications.
- + **Tip-Off Assist** – An Advanced Payload feature that removes the need for the operator to manually dump (meter load) to target. When the operator initiates the final pass weighing process and activates Tip-Off Assist, the loader will automatically tip-off to target weight.



REDUCE RELOADS FOR QUICK PAYBACK



TECHNOLOGY IN ACTION

For wheel loader operators in quarry yards, accurate payload measurement helps to avoid the all-too-common need for a fully-loaded truck to dump an overload and return to the queue. Eliminating reloads results in significant operational efficiency gains, as well as cost savings.

In one study conducted by Caterpillar, a quarry customer loading sand six days a week was dumping 22 misloaded trucks per day. Just by avoiding the lost time involved in dumping and reloading those trucks, the Cat Payload system saved the customer \$292,000 in the first year. Factor in the extra fuel burned, plus the extra machine wear and tear caused by the unnecessary reload cycles, and the savings become even more significant.

Payload compatibility varies by wheel loader model and availability varies by region. Contact your Cat dealer to discuss the best systems and options for your fleet, operators and applications.

PAYLOAD CASE STUDY SUMMARY:

Payload:	SAND
Target:	39,936 TRUCK LOADS PER YEAR
Working:	6 DAYS PER WEEK
Results:	22 MISLOADS PREVENTED PER DAY
Savings:	\$292,000 ANNUALLY
Payback:	6 DAYS

17%
INCREASE IN
PRODUCTIVITY*

*Individual Results Will Vary

PAYLOAD TECHNOLOGY FOR WHEEL LOADERS

COMPARISONS AT A GLANCE



FEATURE	PAYLOAD	ADVANCED PAYLOAD
Upgrade Kits - Payload upgrade kit availability varies by model and region. Some kit features differ from factory installed versions. Contact your Cat® dealer for more information.	●	●
Touchscreen Display - Integrated into the cab, provides the operator with all Payload information and configurable options. The system supports more than 30 different languages.	Integrated ¹	Dedicated
Low Lift Weighing - Provides an estimate of bucket payload quickly without lifting through the entire weight range. Allows operators to tip-off material sooner to speed up the loading process.	●	●
Tip-Off - Quickly view adjusted weights in real-time; this allows operators to manually make final pass-load adjustments for faster cycle times; two modes – at the stockpile, or at the truck.	●	●
Target Weight - Allows the operator to set the target payload weight. Advanced Payload offers dynamic target weight shortcuts for convenient selection.	●	●
Simple Calibration - Allows the operator to fine tune the Payload system to weighbridge scale.	●	●
Trip Totals - Easily track total production, cycles, and trucks or by shift/day by using resettable Trip A or Trip B.	●	●
Overload Warnings - Automatically notifies operators from the on-screen display or managers via VisionLink™ when a bucket load exceeds payload limit.	●	●
Printer Support - Quickly print truck payload tickets plus summary reports in the cab for daily record keeping and shift reporting. Optional printer must be ordered separately.	●	●
VisionLink™ and Cat Productivity Reporting² - Managers can view payload details and key performance indicators online. These comprehensive reporting features assist managers in evaluating fleet performance for improving loading efficiency, operator proficiency and daily production.	Limited Reporting	Detailed Reporting
Tip-Off Assist - When the operator initiates the final pass tip-off process, the machine will automatically tip-off to target weight. Removes the need for the operator to manually dump (meter load) to target.		● ³
List Management - Add or delete favorite materials and trucks or create up to four custom lists directly through the display.		●
Material, Truck and List Totals - Easily track production in your way by material/truck/shift/customer/site/day/week or any of the custom lists.		●
Data Download and Expanded Memory - Allows the operator to download data to a USB thumbdrive and store truck/material/custom IDs and truckloads in onboard lists.		●
Manual Add Mode - Allows the operator to manually control weight and load operations within the Payload system.		●
Multitask Mode - Allows the operator to track two loadout jobs separately such as switching between loading a rail car and a truck. Tasks store separately when completed.		●
Split Mode - Allows the operator to split a total vehicle weight into Subtotals.		●
Dispatch for Loading⁴ - Automates the assignment of the loader's list of jobs by truck, material, and payload. It improves the accuracy in the loadout, and potentially reduces a truck's waiting time on site.		●

● = Available

¹Upgrade Kits Include a Dedicated Display ²Subscription Required ³Tip-Off Assist Not Available with Upgrade Kits ⁴Subscription and Compatible Scale House Software Required

For more complete information on Cat products, dealer services and industry solutions, visit us on the web at www.cat.com.

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