

Reduce Fuel Consumption & Emissions, Extend Brake Life & Improve Productivity

Parallel system benefits

- Reduce fuel consumption by up to 1,500 gallons per truck annually, depending on duty cycle.
- Reduce emissions of NOx, particulates and CO2 up to 20%.
- Extend brake life up to 300%.
- Two operating modes offer flexibility. One maximizes fuel savings. The other increases productivity.
- More torque for quicker acceleration and shorter cycle times.
- Extend service intervals for engine and transmission.

Eaton's Hydraulic Launch Assist (HLA®) solution supplements the vehicle's conventional powertrain. The system is best suited for vehicles that operate in heavy stop-and-go cycles, with sufficient distance between stops to generate stored energy.

Due to its parallel architecture, this system provides high reliability. The truck can still perform when the HLA is off line, thus avoiding costly measures in the field to keep serving customers.

All these benefits lead to pay backs as low as 3-4 years when used in high-value duty cycles as described below.

"We anticipate an annual reduction in excess of 1,500 gallons of fuel compared to our non-hybrid fleet of similar vehicles."

Nancy Kuhn, fleet administrator,
City of Denver Public Works Fleet
Maintenance Division

CLEAN, RELIABLE, AND HIGHLY EFFICIENT

Ideal duty cycle is repeated starts and stops with sufficient distance between stops in order to recover adequate kinetic energy

Hydraulic Launch Assist (HLA®) Duty Cycle Application Guide

DISTANCE BETWEEN STOPS FT [M]	MAX SPEED BETWEEN STOPS MPH [KPH]	NUMBER OF STOPS PER DAY							
		500	600	700	800	900	1000	1100	1200
50 [15.24]	6 [10]	Low	Low	Low	Low	Low	Low	Low	Low
60 [18.29]	8 [13]	Low	Low	Low	Low	Low	Low	Low	Low
70 [21.34]	10 [16]	Low	Low	Low	Low	Low	Low	Low	Low
80 [24.38]	12 [19]	Low	Low	Low	Low	Low	Low	Low	Low
90 [27.43]	14 [23]	Low	Low	Low	Low	Low	Low	Low	Low
100 [30.48]	16 [26]	Low	Low	Low	Low	Low	Low	Low	Low
110 [33.53]	18 [29]	Low	Low	Low	Low	Low	Low	Low	Low

>25 mph [40kph] non applicable to HLA system (de-clutch)

Color Key	HLA Value
Green	High
Yellow	Medium
Red	Low



Powering Business Worldwide



An Eaton Green Solution

Eaton uses a parallel hydraulic system, where the conventional vehicle powertrain is supplemented by the addition of the hydraulic system. The HLA system recovers and stores most of the kinetic energy usually absorbed by the brakes. This extends brake life, reduces fuel consumption, and increases productivity as a result of more torque for quicker acceleration.



- A. High pressure accumulator
- B. Transfer case
- C. Pump motor assembly
- D. Reservoir

HLA is available at Peterbilt and Crane Carrier today. Contact Eaton for installation on other chassis.

For more Eaton Hybrid information, call 1-800-826-4357, option 3.

Features:

- Parallel hybrid hydraulic regenerative braking system.
- System recovers the majority of the energy normally wasted as heat during braking and uses it to supplement the engine's power during acceleration.
- Provides the greatest benefit when the vehicle's driving cycle is at least 80 feet between stops and 800 or more stops a day.

Benefits:

- Parallel system allows vehicle to function normally when hybrid system is offline.

Fuel Economy:

- Reduces annual fuel consumption by up to 1,500 gallons of fuel

Performance:

- Provides more torque for quicker acceleration thus improving productivity

Environment:

- Reduces emissions of NO_x, particulates and CO₂

Maintenance:

- Extends brake life up to 300 percent
- Extends service intervals for engine and transmission

Specifications:

Mass of HLA System:
1650 lbs. [748.43 kg]

Maximum Pressure:
5000 psi [344.74 bar]

Total System Oil Volume:
21 gallons [79.5 liters]

Torque: 2550 lb-ft [3457.34 Nm]

Active Speed Range:
Up to 25 mph [40 kh]

Wheelbase Options:
191" (single) [4.85 m],
187" (tandem) [4.75 m],
197" (tandem) [5.00 m],
215" (tandem) [5.46m]

Eaton offers the world's most complete line-up of hybrid systems for commercial vehicle applications and the charging and networked charging infrastructure for commercial and residential applications. Leading package delivery and beverage fleets are using delivery vehicles with Eaton hybrid systems. Eaton offers additional refuse truck product solutions such as power-on-demand variable flow piston pumps that deliver potential fuel savings; fluid conveyance solutions for better productivity and less noise; multiplex switches offering 50%-75% less weight; FX solutions allowing programmed automated operations, and; programmable sensors for hard to sense applications. For more information, visit www.eaton.com.

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For spec'ing or service assistance, call 1-800-826-HELP (4357) or visit our web site at www.roadranger.com. In Mexico, call 001-800-826-4357.

Roadranger: Eaton, Dana, and other trusted partners providing the best products and services in the industry, ensuring more time on the road.

Note: Features and specifications listed in this document are subject to change without notice and represent the maximum capabilities of the software and products with all options installed. Although every attempt has been made to ensure the accuracy of information contained within, Eaton makes no representation about the completeness, correctness or accuracy and assumes no responsibility for any errors or omissions. Features and functionality may vary depending on selected options.

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TRSL5500 0811