

The New Hyster Reach Truck vs. The Competition



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THE THREE DIMENSIONS



Hyster Reach Truck vs. Crown™



CROWN RR5200 SERIES

- AC Drive Optional
- AC Hoist Not Available
- Electric Steering Not Available
- Side Stance Only, No Forward / Aft Stance
- Outdated Technology
- Poor Performance
- Poor Ergonomics
- Difficult Service Access To Most Components



DEPENDABILITY

DRIVE SYSTEM

Hyster

AC Drive Motor
Stationary motor mount



Crown

DC Drive Motor-Less efficient
Brushes to maintain
Frequent cleaning of built up carbon
AC Drive Motor option



Hyster Advantage – modern technology, less maintenance, more uptime.

DEPENDABILITY

CANbus TECHNOLOGY

Hyster

Industry Leader in the use of
CANbus technology
Links all systems



Crown

Conventional technology
Labels each component
Provides an area map to show component location
A wiring mess



Hyster Advantage – modern technology, less maintenance, more uptime.

DEPENDABILITY

WIRING SYSTEM

Hyster

Double Sealed Connectors
used throughout
IP66 rating
Waterproof



Crown

Amp and Molex connectors
Unsealed
Contamination inevitable



Hyster Advantage – modern technology, more uptime.

DEPENDABILITY

HYDRAULIC SYSTEM

Hyster

Bi-directional hydraulic pump
No separate control valve
No proportional spool valve
Runs cooler; Reduces heat
Energy efficient



Crown

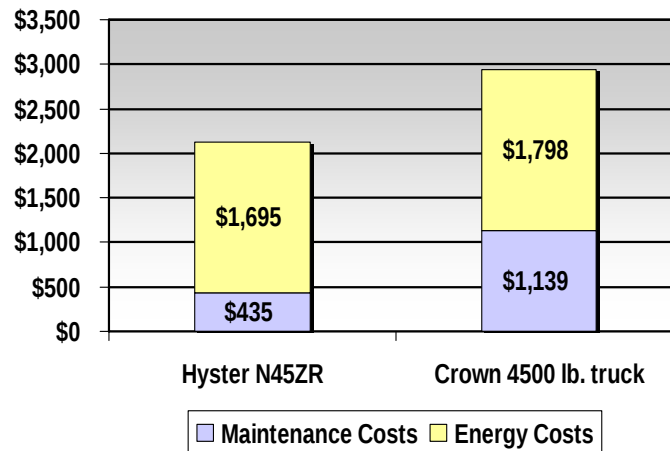
Separate control valve
Uses proportional spools
Runs hotter
Less efficient
Less durable



Hyster Advantage – modern technology, more efficient, more uptime.

COST OF OPERATIONS

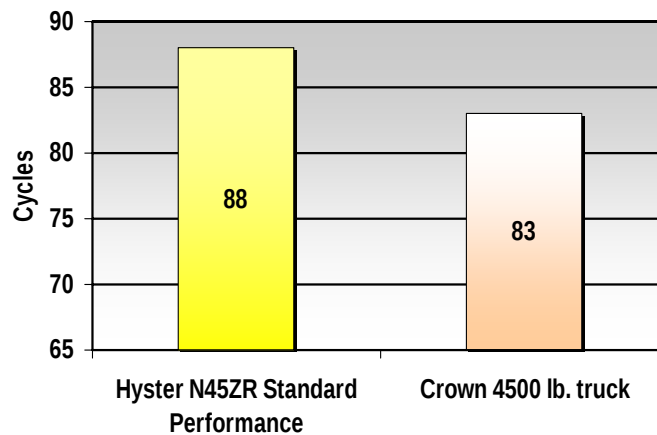
(2,000 hrs. per year)



Hyster Advantage – lower cost per pallet moved.

COST OF OPERATIONS

Cycles Completed Before Battery Change



Hyster Advantage – more pallets moved per day, higher throughput.

COST OF OPERATIONS

Fewer Wearable Parts and Longer Service Intervals

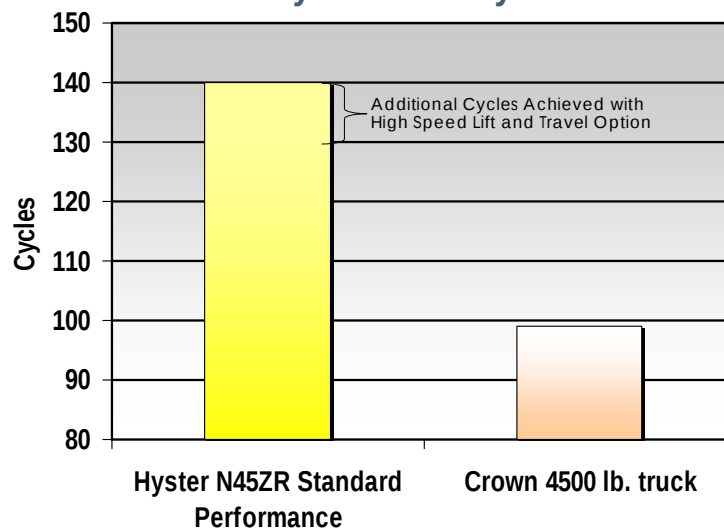
	Hyster	Crown DC Traction, DC Lift	Crown AC Traction, DC lift
Contactors	1	2	2
Motor Brushes	0	12	8
Periodic Maintenance	500 hours	250 hours	250 hours

NO BRUSHES TO MAINTAIN - 500 HOUR SERVICE INTERVALS

Hyster Advantage – lower maintenance costs, more uptime.

PRODUCTIVITY

Cycles Per Day



Hyster Advantage – higher throughput, more pallets moved per shift, lower cost per pallet moved.

PRODUCTIVITY

STANDARD AC TRACTION, HOIST, AND STEERING
PRODUCE HIGHER THROUGHPUT

	Hyster	Crown
AC Traction	Standard	Optional
AC Lift	Standard	Not Available
AC Steering	Standard	Not Available

Hyster Advantage – higher throughput, more uptime.

PRODUCTIVITY

FASTEST TRAVEL, FASTEST LOWERING, FASTEST ACCELERATION

			Hyster N45ZR Series with Standard Performance	Hyster N45ZR Series with High Speed Lift and Travel	Crown 4500 lb. truck
Travel Speed	Empty (Forks first)	mph	7.4	8.0	5.7
	Empty (Forks trailing)	mph	7.4	8.0	7.2
	Loaded (Forks first)	mph	5.8	5.8	5.7
	Loaded (Forks trailing)	mph	6.5	6.5	7.2
Lift Speed	No Load	fpm	114	130	127
	Rated Load	fpm	65	74	70
Lowering	No Load	fpm	105	105	85
	Rated Load	fpm	105	105	90
Acceleration (time to 22 ft)	No load (forks trailing)**	sec	3.7	3.4	4.5
	2000 lb load (forks trailing)**	sec	4.0	3.4	5.0

**Based on representative cycle testing.

Hyster Advantage – higher throughput, more pallets moved per shift.

PRODUCTIVITY

POWERED LOWERING

HYSTER - YES, STANDARD (ZR)

CROWN - NO

Hyster Advantage – WOW on demos! Higher throughput, lower cost per pallet moved.

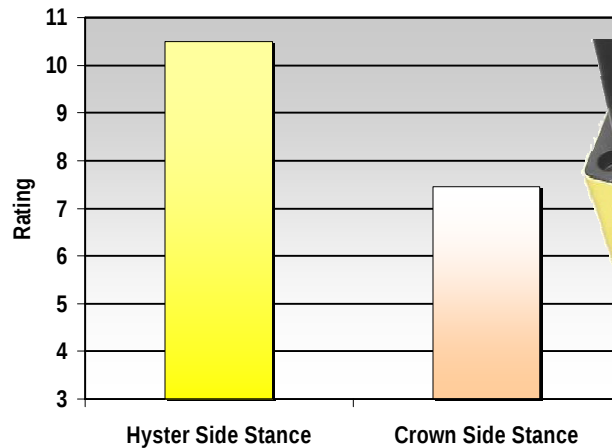
PRODUCTIVITY

- Productivity Options
 - Performance Options
 - Auto Fork Leveling
 - Load Transport Position
 - Fork Height Display
 - Shelf Height Selector
 - Load Weight Display

Hyster Advantage – WOW on demos! Higher throughput.

ERGONOMICS

Overall Usability



Hyster Advantage – WOW on demos, more comfortable operator, higher throughput.

ERGONOMICS

- Crown 5200 Series
- Side Stance Only
- Operator Is Locked Into One Position All Day
- Non Adjustable Backrest And Armrest
- Fixed Tiller Steering, Protrudes Into Operator Compartment
- No Rear Post As Standard



Hyster Advantage –more comfortable operator, higher throughput.

ERGONOMICS

OPTIONAL COMFORT PACKAGE

Not Available On Crown



Steering knob doesn't protrude into the operator compartment

Height adjustable backrest

6" height adjustability of the backrest



3" forward / back adjustment of the control handle pod



Non-adjustable compartment
The steer tiller protrudes into the operator compartment

Hyster Advantage – WOW on demos, more comfortable operator, higher throughput.

ERGONOMICS

- Operator Compartments – Floorboard
 - Hyster ZR has Largest Floorboard in the Industry – 335 sq. in. Versus Crown with 272 in. (+23%)
 - Hyster ZR has Flush Mounted Brake



Hyster Advantage – more comfortable, flex legs, change positions, higher throughput.

SERVICEABILITY

- Crown 5200 series
 - Crown requires system 1-2-3 maps to locate and repair components
 - Cluttered compartment, old technology, poor efficiency
 - Crown compromises serviceability for aesthetics

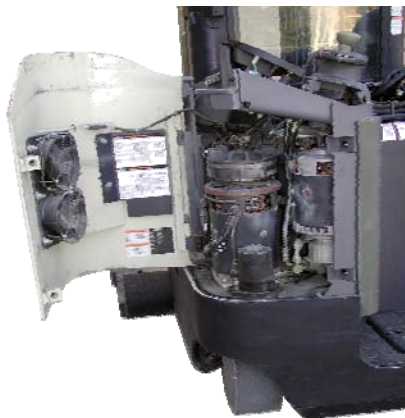


Hyster Advantage – more uptime, lower maintenance costs.

SERVICEABILITY

CROWN 5200 SERIES

WHICH TRUCK WOULD YOU WANT TO WORK ON?



Hyster Advantage – more uptime, lower maintenance costs.

SERVICEABILITY

- **Crown Load Base Arm & Load Wheels**
 - Crown does not use a trunion-mounted mast
 - Crown does not have load wheel protection as standard



Hyster Advantage – stronger base arm / frame weldment, higher capacity retention.

Hyster Versus Crown 5200 Series

- Improved Uptime
- \$500 - \$800 Energy and Maintenance Savings per Year
- Hyster able to move 11% to 22% more loads per hour than Crown
- Both Side Stance and Fore / Aft Stance more Ergonomic than Crown
- Improved Uptime - through reduced repair times and extended service intervals

THE THREE DIMENSIONS



The Hyster Reach Truck vs. Raymond®



RAYMOND 7400 SERIES

- AC Drive Standard
- AC Hoist Optional
- Electric Steering On 18" And 21" BC Only
- Forward / Aft Stance
- Side Stance Not Ergonomic
- High Proprietary Parts Pricing
- High Cost Of Operation



DEPENDABILITY

DRIVE SYSTEM

Hyster

AC Drive Motor
Stationary motor mount



Raymond

AC Drive Motor
Motor rotates causing power cables to flex



Hyster Advantage – less maintenance, more uptime.

DEPENDABILITY

CANbus TECHNOLOGY

Hyster

Industry Leader in CANbus technology use
Links all systems



Raymond

Basic use of CANbus technology
Links some systems



Hyster Advantage – superior technology, more uptime.

DEPENDABILITY

WIRING SYSTEM

Hyster

Double Sealed Connectors used throughout
IP66 rating
Waterproof



Raymond

Amp and Molex connectors
Some sealed
Some unsealed



Hyster Advantage – superior components, more uptime.

DEPENDABILITY

HYDRAULICS SYSTEM

Hyster

Bi-directional hydraulic pump
No separate control valve
No proportional spool valve
Runs cooler
Reduces heat
Energy efficient



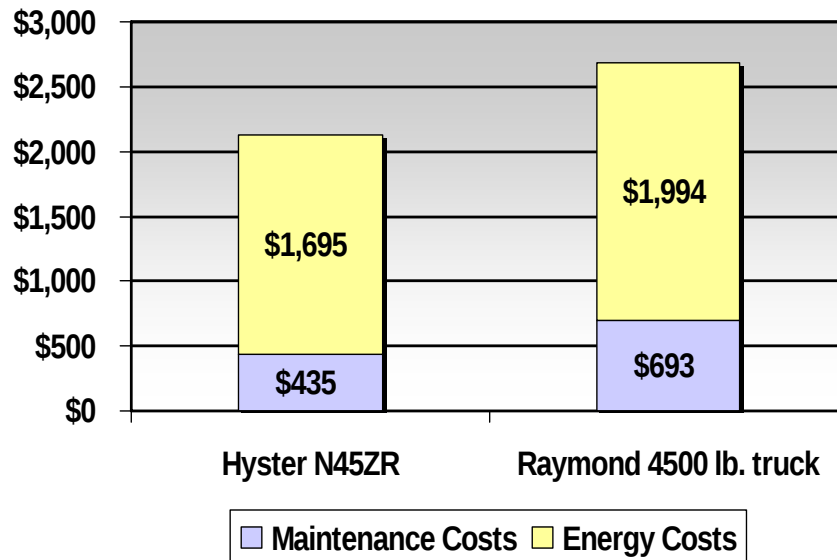
Raymond

Separate control valve
Uses proportional spools
Runs hotter
Less efficient
Less durable



Hyster Advantage – superior technology, more uptime.

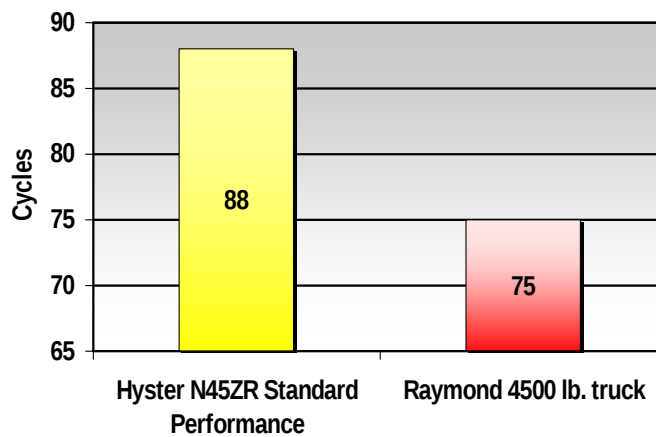
COST OF OPERATIONS



Hyster Advantage – less energy costs.

COST OF OPERATIONS

Cycles Completed Before Battery Change



Hyster Advantage – higher throughput, more run time.

COST OF OPERATIONS

Fewer Wearable Parts and Longer Service Intervals

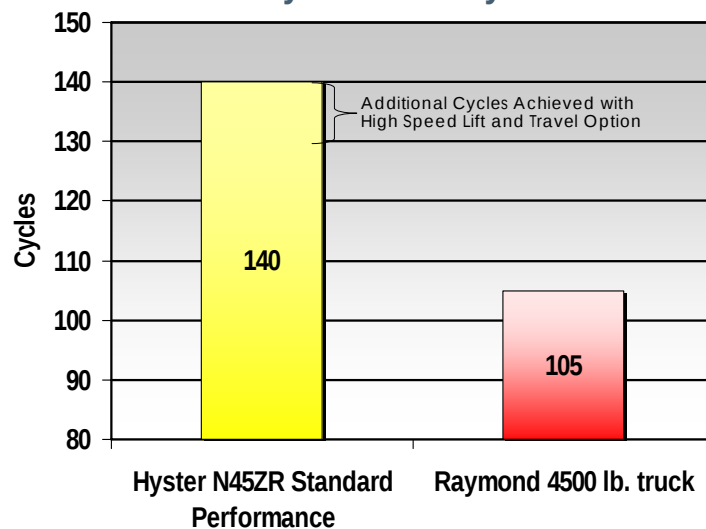
	Hyster	Raymond AC Traction DC Lift	Raymond AC Traction, AC lift
Contactors	1	3	3
Motor Brushes	0	8	4

**NO BRUSHES TO MAINTAIN
500 HOUR SERVICE INTERVALS**

Hyster Advantage – lower maintenance costs, more uptime.

PRODUCTIVITY

Cycles Per Day



Hyster Advantage – higher throughput, lower cost per pallet moved.

PRODUCTIVITY

Standard AC Traction, Hoist, and Steering Produce Higher Throughput

	Hyster	Raymond
AC Traction	Standard	Standard
AC Lift	Standard	Optional
AC Steering	Standard	Not Available

Hyster Advantage – higher throughput, lower cost per pallet moved.

PRODUCTIVITY

Fastest Travel, Fastest Lowering, Fastest Acceleration

			Hyster N45ZR Series with Standard Performance	Hyster N45ZR Series with High Speed Lift and Travel	Raymond 4500 lb. truck
Travel Speed	Empty (Forks first)	mph	7.4	8.0	7.5
	Empty (Forks trailing)	mph	7.4	8.0	7.5
	Loaded (Forks first)	mph	5.8	5.8	7.5
	Loaded (Forks trailing)	mph	6.5	6.5	7.5
Lift Speed	No Load	fpm	114	130	130
	Rated Load	fpm	65	74	60
Lowering	No Load	fpm	105	105	95
	Rated Load	fpm	105	105	105
Acceleration (time to 22 ft)	No load (forks trailing)**	sec	3.7	3.4	4.1
	2000 lb load (forks trailing)**	sec	4.0	3.4	4.3

**Based on representative cycle testing.

Hyster Advantage – higher throughput, lower cost per pallet moved.

PRODUCTIVITY

POWERED LOWERING

HYSTER - **YES, STANDARD (ZR)**

RAYMOND - **NO**

Hyster Advantage – WOW on demos! Higher throughput, smoother lowering cycle.

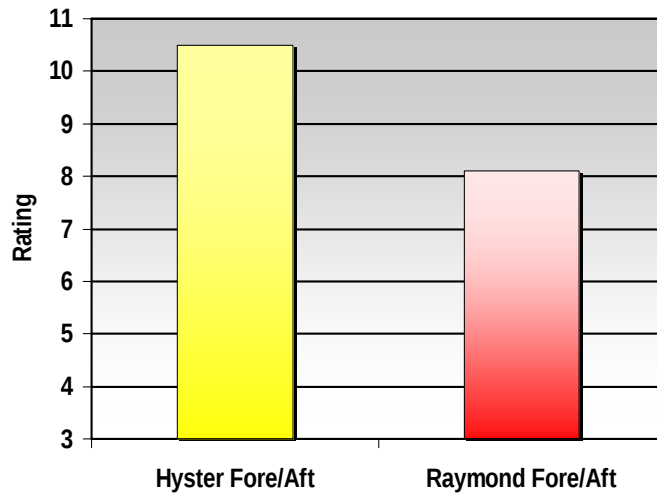
PRODUCTIVITY

- **Productivity Options**
 - Performance Options
 - Auto Fork Leveling
 - Load Transport Position
 - Fork Height Display
 - Shelf Height Selector
 - Load Weight Display

Hyster Advantage – WOW Options; higher throughput.

ERGONOMICS

Overall Usability



Hyster Advantage – WOW Ergonomics; demos well.

ERGONOMICS

Raymond 7400 Series

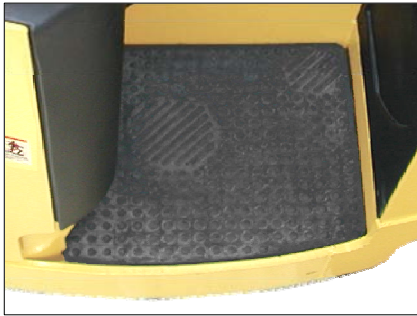
- Standard Aft Stance Has Good Ergonomics With Aft Drive Handle
- Side Stance Option Has Poor Ergonomics – No Armrest and Non-adjustable Backrest. Handle Has No Palm Rest.
- Fixed Tiller, Non Adjustable



Hyster Advantage – WOW Ergonomics; demos well.

ERGONOMICS

- Operator Compartment - Floorboard
- Hyster ZR Series has Largest Floorboard in the Industry – 335 sq. in. vs. Raymond with 287 Sq. In. (+ 17%)
- Hyster ZR has Flush Mounted Brake



Hyster Advantage – more comfortable operator – easily vary stance throughout shift.

SERVICEABILITY

Raymond 7400 Series

- Hyster ZR Series Offers Much Faster and Simpler Access to All Major Components



Hyster Advantage – faster service – lower maintenance costs.

SERVICEABILITY

Raymond Base Arm & Load Wheels

- Hyster ZR Uses Trunion-Mounted Mast
- Raymond Bolts Base Arms to the Mast, Which Requires Regular Maintenance to Torque the 16 Bolts Periodically
- Hyster ZR Protects Leading Load From Damage



Hyster Advantage – stronger base arm / frame mounting – lower maintenance costs.

SERVICEABILITY

HYSTER'S OPTIONAL STEERED CASTER

- Simple Brushless DC Motor
- No Maintenance or Adjustments Required



Hyster Advantage – lower maintenance costs.

SERVICEABILITY

RAYMOND STEERED CASTER

- Complicated Linkage System Under Chassis
- Requires Maintenance and Greasing



Hyster Advantage – less complexity – lower maintenance costs.

Hyster Versus Raymond

- Improved Uptime
- \$500 - \$800 Energy and Maintenance Savings per Year
- Hyster able to move 11% to 22% more loads per hour than Raymond
- Both Side Stance and Fore / Aft Stance more Ergonomic than Raymond
- Improved Uptime - through rapid repair and extended maintenance intervals