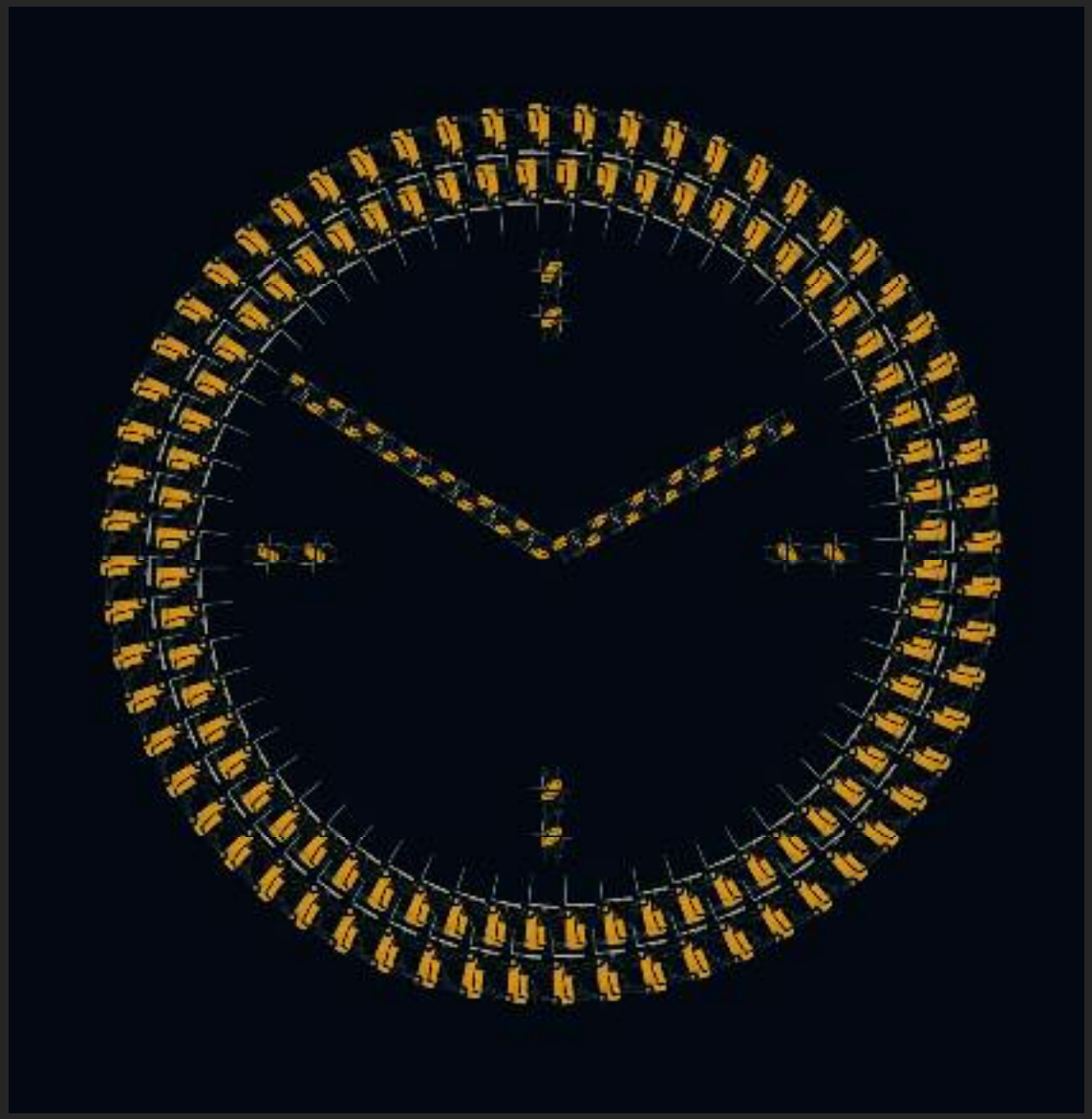
VT and VF Series

Electric Counterbalance Forklift Trucks

Yale®

People. Products. Productivity.

Contents



After conducting extensive customer research, Yale has invested heavily in developing the VT and VF series of counterbalance forklift trucks – the most ergonomically advanced and productive counterbalance forklift truck series on the market available today.

Nobody knows how to combine people and products to create outstanding productivity better than Yale. Each truck in the series demonstrates a total commitment to innovation, cutting-edge design, comprehensive testing, advanced components and superior manufacturing.

Yale takes great pride in ensuring everything's in its right place. From the design of the truck to providing the best application solution, productivity is improved at every opportunity. Nowhere is this philosophy more evident than in the VT and VF series.

Overview

Yale's range of 48 Volt three-wheel and four-wheel electric trucks has been designed to provide the most energy efficient productive solution, at the lowest cost of ownership for the widest range of applications. So, whatever the intensity of your application, there is a VT or VF series forklift truck to meet your needs.

For example, the three-wheel VT truck is available in 23 different configurations of lifting capacities and wheelbases. Add to this the number of different amp hour capacity batteries and the options available increase further still.

For long travel distances, external applications or where more space is available, the four-wheel VF forklift truck combines the compactness of a three-wheel truck with the performance normally associated with ICE trucks. The four-wheel VF is available in 11 different configurations of lifting capacities and wheelbases.

VT

Three-Wheel Electric Truck

VF

Four-Wheel Electric Truck

Model	Capacity kg	Wheel bases			High frame height for high capacity and Yale custom batteries	Side extraction available	New clear view mast
Three-Wheel ERP-VT	15000	S	–	–	No	Yes	Yes
	16000	S	M	L	Yes	Yes	Yes
	18000	–	M	L	Yes	Yes	No
	20000	–	M	L	Yes	Yes	No
Four-Wheel ERP-VF	16000	–	M	L	No	Yes	Yes
	18000	–	M	L	No	Yes	No
	20000	–	–	L	Yes	Yes	No

S = Short
M = Medium
L = Long

Standard rounded grab-handle for easy on/off access

Heads-up display

Clear view mast

Standard reverse grab-handle

Generous headroom for operators >194cm

Curved overhead guard

Swivel seat option

Integrated mini-lever module

Full suspension seat with forward, reverse and lumbar adjustment

Armrest as standard

Generous footwell space and open right hand side*

Infinitely adjustable steering column with memory-tilt option

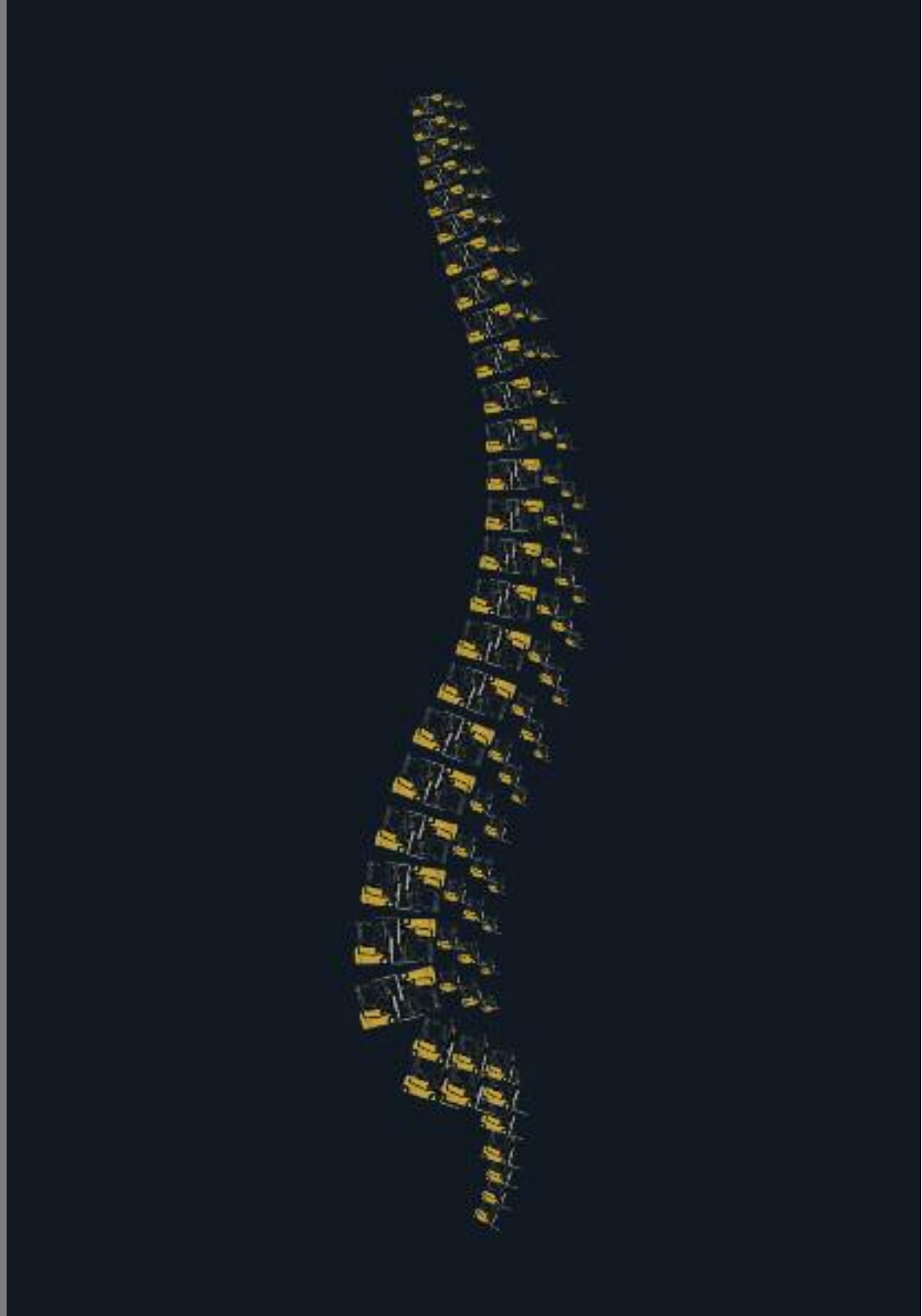
Lowest step height in the industry

*When fitted with the mini-lever module option

Ergonomics

When it comes to operators, comfort is everything

It's the reason the new VT and VF forklift trucks have been designed with industry-leading ergonomics throughout. After all, the more comfortable the operator the more productive they'll be. A host of class-leading ergonomic features help to significantly reduce repetitive strain injury, back, neck and thigh pain, ensuring operators can work both comfortably and productively.



Best-in-class operator access and seating position

Yale VT and VF trucks have been designed to comfortably accommodate the smallest (<160cm) to the tallest operators (>194cm).

Small Operator ~ <160cm

Average Operator ~ <180cm

Tall Operator ~ >194cm

Seating

Putting operator comfort in the driving seat

The full suspension seat has been designed to minimise the transmission of ground shocks, minimising the operator's exposure to Whole Body Vibration levels. Features include:

- Easy adjustment to suit stature and weight, providing the correct suspension and full operator comfort
- Armrests as standard
- Easy forward, reverse and lumbar support adjustment for ideal seating position
- Swivel seat option for reverse driving comfort: 12º to right and 5º to the left

"We're always looking for enhanced comfort in the forklift trucks we purchase, because the more comfortable the truck is the more productive our operators are"

***Robert Boydell** Global Commodity Manager, Borg Warner*

Mini-lever module and armrest

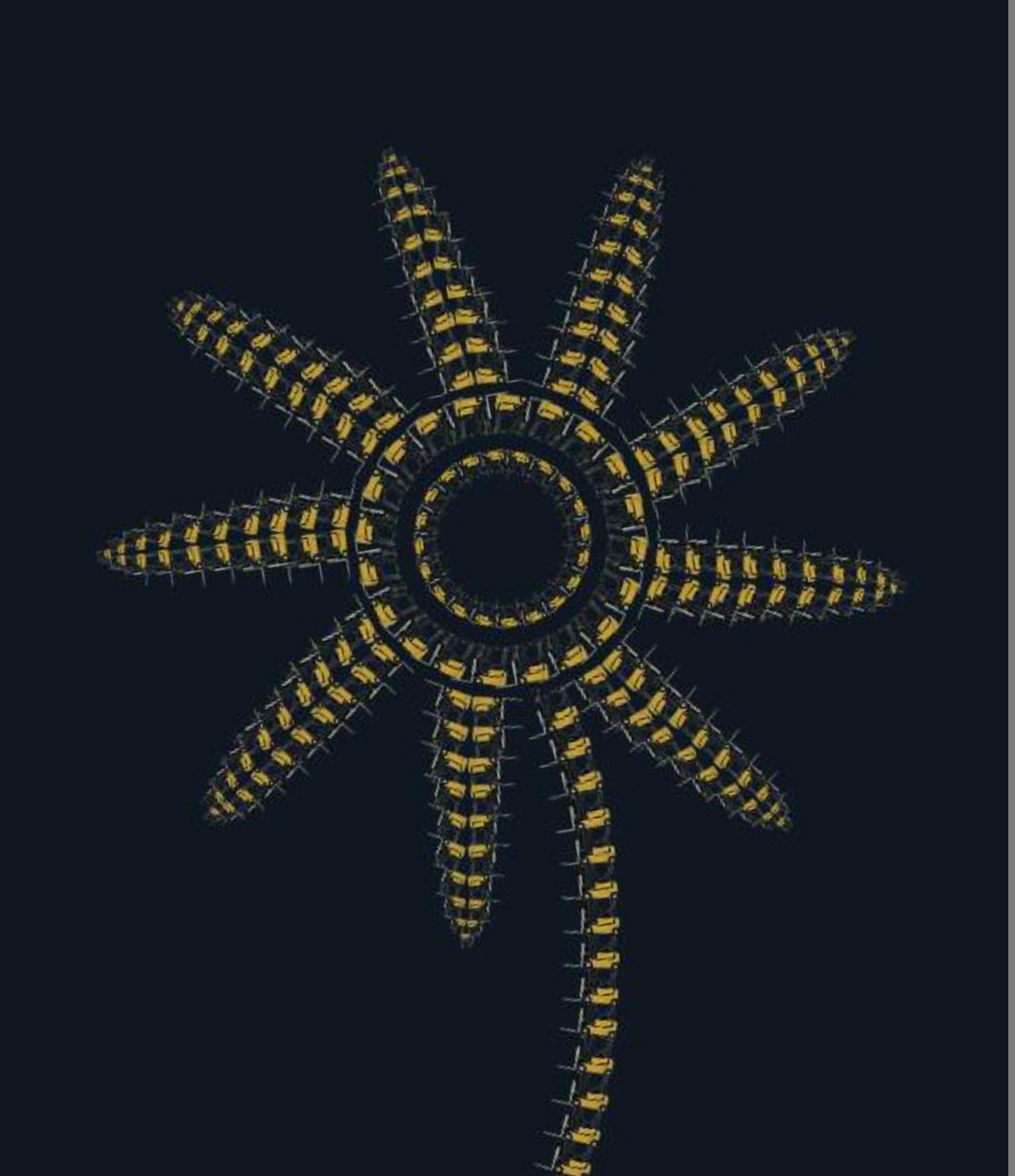
Ergonomic functionality designed by experts

- Designed to reduce stress on the operator's arms, hands and fingers
- Integrated direction switch enables operators to control all the major truck functions without removing their arm or hand from the armrest
- Padded construction allows the operator to comfortably lean on the armrest which provides additional comfort over long shifts
- Full integration with the seat – designed to move simultaneously when seat is adjusted
- Easy forward/reverse, up/down adjustment
- Ergonomic manual-levers have been designed with soft-touch moulding and a contoured shape, and incorporate an integrated direction switch

Steering column

Adjustable design to steer you in the right direction

- Infinitely adjustable through the range (26°)
- Easy adjustment for the most comfortable driving posture
- Gas spring assisted
- Mounted to the cowl, to provide increased space in the footwell area
- Contoured for easy on/off access
- Ergonomic option includes telescopic adjust, memory-tilt and synchronous steering



Productivity

Ensuring everything in your application operates beautifully

The productivity of any application is affected by a multitude of factors: number of pallets moved, truck reliability, operator efficiency and ease of servicing to name but a few. It's only through monitoring, controlling and measuring performance that productivity can be truly increased and cost of operation optimised.

"When we've got hundreds of pallets to be unloaded and prepared for collection in a small amount of space, and at predetermined times, we can't afford expensive delays. We need our operators to be working effectively, efficiently and safely at all costs".

Chris Arnold, Head of TLI (Network), GEFCO UK

Excellent Forward Visibility

The Yale 1500kg and 1600kg trucks feature new clear view masts for excellent, class-leading forward visibility. The masts feature innovative nested mast channels while at the same time maintaining the legendary rigidity and durability of Yale masts.

With visibility increased, operators are able to work safely and more efficiently than ever before. In turn, load-handling efficiency is increased delivering greater productivity.

Superior Reverse Driving Position

With many operators spending 50% or more of their time driving backwards, a comfortable reverse driving position is essential to maintain productivity levels over long shifts.

The VT and VF trucks feature a rear grab-handle with integrated horn button, clear footwell and an optional swivel-seat to help alleviate neck, torso and leg strain when driving in reverse for long periods.

Outstanding Overall Versatility

No two applications are identical, which is why the Yale VT and VF trucks have been designed to offer outstanding versatility and to surpass the demands of the most challenging working environments.

Powerful hydraulics, dual front-wheel AC drive, side battery extraction and compact turning radius are best-in-class features that help deliver optimised load-handling efficiency.

Heads-up display

Everything you need to know at a glance

- Quick and easy-to-read LCD screen display positioning frees up driver field of vision for more productive load handling
- Soft keys allow the operator to access the truck menu and choose from four performance modes to suit the application
- Heads-up display provides information on:
  - battery charge level
  - direction of travel
  - hours worked
  - diagnostic troubleshooting codes

  A load weight indicator option is also available
- Easily accessible onboard diagnostics help maximise uptime

Dashboard

Generous storage for an uncluttered workspace

- Storage space includes provision for a clipboard, a drinks holder and storage pockets
- Light switches are also located on the dashboard and there is provision for an optional 12V power outlet
- For lift trucks with an integrated cabin, the wiper motor is incorporated into the cowl maintaining maximum operator visibility

Automatic park-brake

One less thing for operators to worry about

The automatic park-brake is an important safety and ergonomic feature for operators who get on and off the truck frequently.

- An electro-magnetic release brake is automatically activated when the truck is not in motion, or when the operator is not seated
- In addition, the automatic park-brake provides improved controllability on ramps and grades

Side battery extraction option

Quick and effective, user-friendly battery extraction

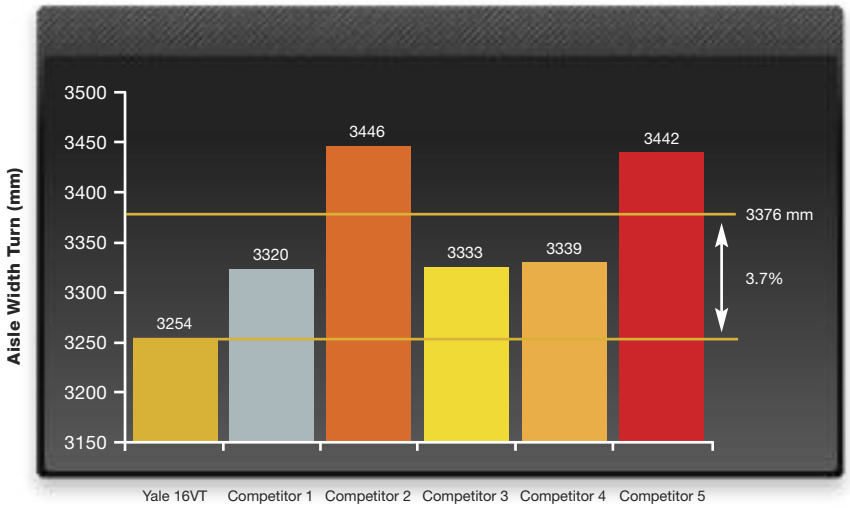
Side-extraction is available across the complete VT and VF series and features:

- An ergonomic and safe battery extraction method which eliminates the hoisting or swinging of batteries
- One person operation
- Easily removable lightweight side cover
- Can be used in conjunction with manual or power-assisted solutions

VT:
Class-leading manoeuvrability among three–wheel trucks

Yale VT trucks provide best-in-class manoeuvrability over the full range of 1500kg to 2000kg tonnes for any wheelbase

- Compact design works better in the narrowest of aisles
- Provides class-leading aisle turning radius when carrying a euro pallet (800 x 1200)



Test results based on comparison of Yale 16VT (short wheelbase) vs. similar competitive models.

VF:
The most manoeuvrable four-wheel lift truck in the market

The VF four-wheel electric truck, features Yale's cutting-edge extended steering-axle

What is it?

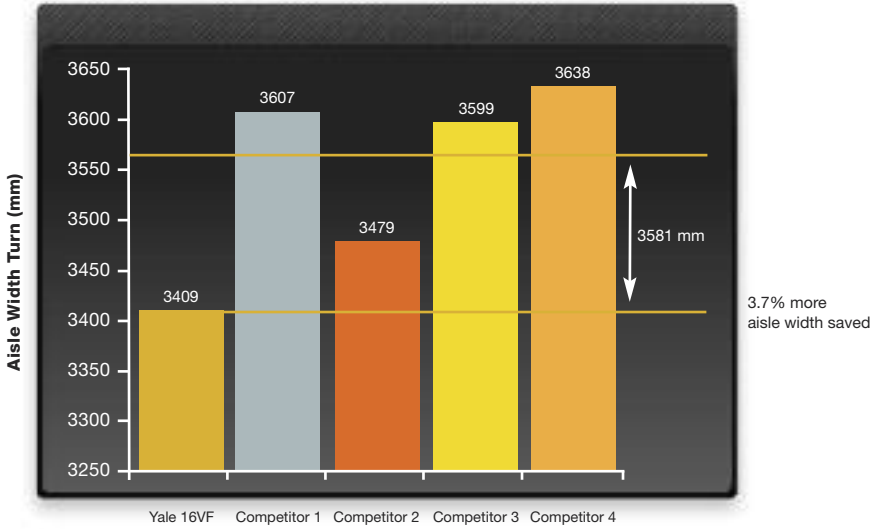
- A unique state-of-the-art, customised steer-axle with increased articulation of the steer wheels, allowing the lift truck to turn in smaller spaces than a four-wheel counterbalance truck with a conventional steer-axle.

How it works

- The limited rotation of a conventional axle causes the lift truck to pivot about a point outside of the front drive wheel. The extended steering-axle fitted on the Yale VF series allows the steer tyres to rotate through 180º, allowing the truck to pivot about a point in the centre of the front axle. This results in a significantly reduced turning radius.

How customers benefit

- Compact design works in the narrowest aisles
- Extended steering-axle maximises floor space utilisation
- Provides class-leading aisle turning radius when carrying a euro pallet (800 x 1200)
- Turning Radius: The VF provides a turning radius comparable with that of a three-wheel truck. For example, the difference in the aisle turning radius of Yale's three and four-wheel medium wheel base trucks is just 79mm.
- Ride Comfort: Operators generally prefer the ride of four-wheel counterbalance forklifts, especially over longer travel distances and uneven or potholed ground conditions. The VF allows this choice whilst maintaining leading AST 4.
- Manoeuvrability: The extended steering-axle provides significantly improved manoeuvrability over conventional four-wheel truck axles. As a result, operators have been found to experience reduced muscle strain which can increase productivity in applications that involve frequent turns and manoeuvring.

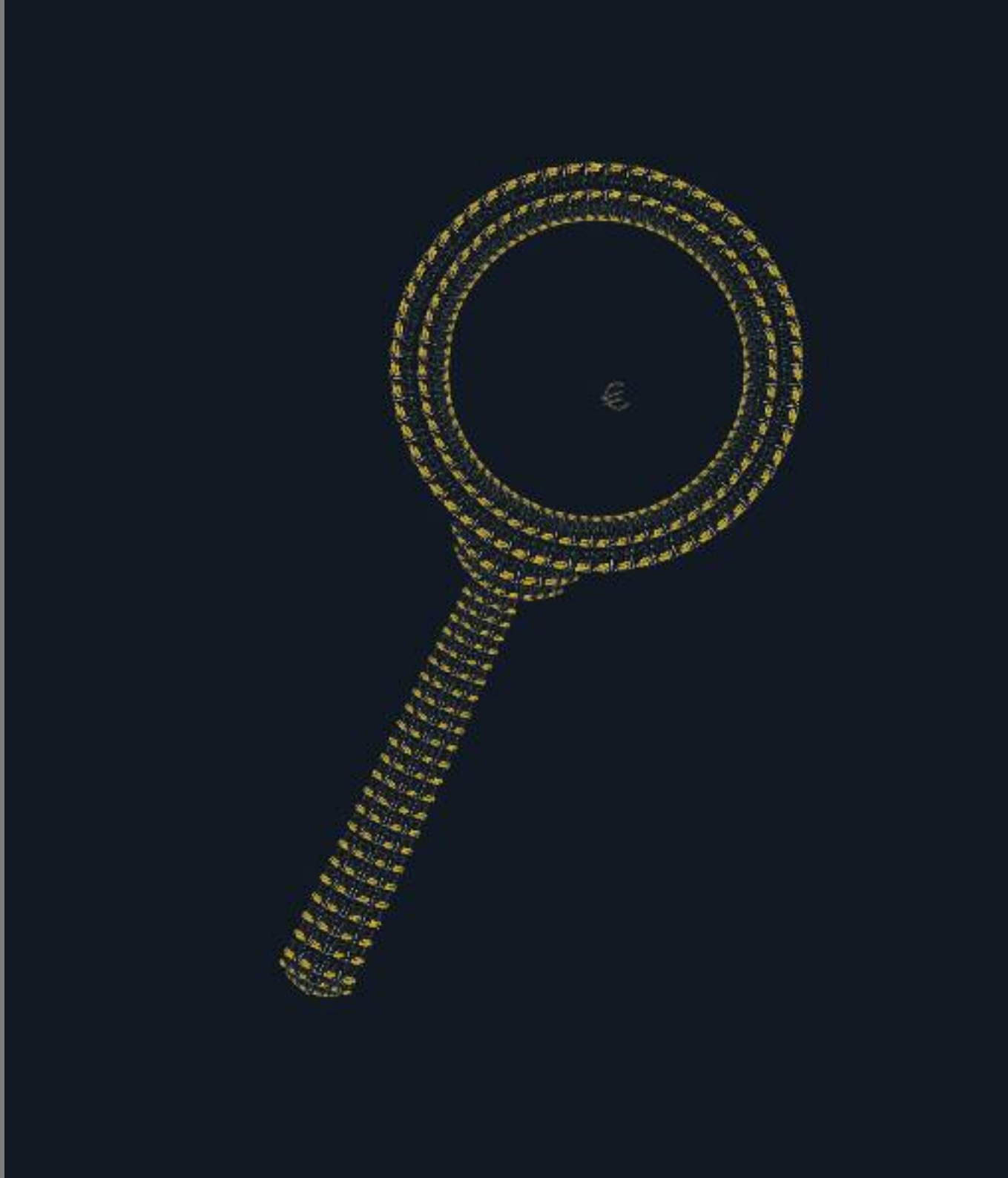


Test results based on comparison of Yale 16VF (medium wheelbase) vs. similar competitive models.

Cost of Operations

High standards, low lifetime operation costs

When considering the lowest lifetime operating costs – periodic maintenance, unscheduled repairs, replacement parts and ever-increasing fuel costs have to be taken into consideration. The initial purchase price of a truck can represent a fraction of the overall cost. That's why Yale engineers have designed the VT and VF series with world-class serviceability and industry-leading reliability built in, to ensure lifetime operating costs are consistently low.



"When I've purchased a truck, I want reassurance it won't cost me a fortune in servicing, repairs and fuel costs."

Mr. Jochen Meier – Director General
Huppertz ASC

Yale has always taken great pride in manufacturing trucks that use industrial grade components and are engineered to withstand the most arduous of applications.

Yale trucks provide outstanding reliability and ensure costs of operations remain low.
Examples include:

- AC traction and pump motors: No brushes, commutator or contactors means minimal service is required
- Traction motors are fully enclosed and have a rating of IP 54 ensuring the highest protection against entry of water and dust. High thermal capacity means that motors are protected against overheating in demanding applications
- Transmissions are lubricated for life, so the transmission oil never needs changing
- Yale VT and VF trucks have maintenance-free, oil-immersed wet disc brakes as standard, eliminating the need for servicing
- SMART (Silent Movement of Air to Regulate Temperature) cooling for controllers ensures cool running and protection of components. IP 65 protection on controllers provides a high level of protection against entry of water and dust particles
- Hall-effect sensors replace potentiometers and micro switches, so there's no longer any damage-prone mechanical or moving part switches
- Steel side covers provide resistance to impact damage and general wear and tear
- LED lights option: Rear light clusters and work lights provide longevity for reduced replacement costs

Lift truck speeds

Keep up with ever-increasing workloads

- Yale VT and VF lift trucks are among the fastest in the industry: VT = 16km/h, VF = 18km/h
- Travel speeds can be set lower by a Yale service technician on request

100% AC Truck

Ultra high-performance motors deliver optimised load-handling efficiency in the toughest of applications

- Dual 5kW front-wheel AC drive motors for outstanding performance
- Class H thermal capacity insulation for the heaviest of applications
- Powerful acceleration and regenerative braking allows for fast changes in direction
- 12kW high performance AC hydraulic pump motor for maximum output and reliability

The balance of performance and energy consumption

Yale VT and VF trucks enable the 'ebalance' of performance and energy consumption by offering the choice of 'eLo' (Energy Saving) or the 'HiP' (High Performance) settings. Both settings have four performance modes to provide maximum application and operator choice. The eLo or HiP settings are selected by a service technician through the overhead display using a service password.

Energy Low (eLo) setting

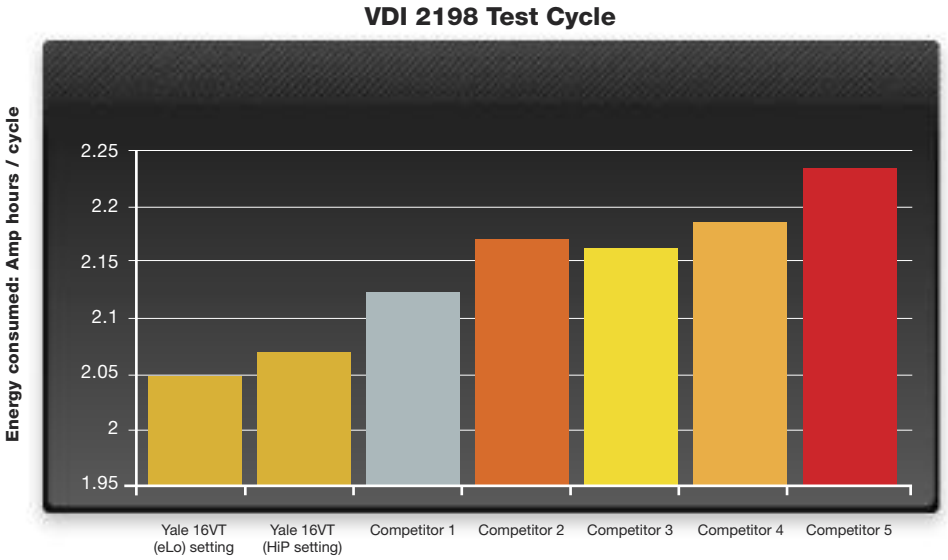
- Provides a balance between truck performance and battery shift life
- Lower than maximum speed acceleration and hydraulic performance to optimise battery life
- Truck acceleration and top speed will vary with load
- Energy consumption is lower with competitive performance

High Performance (HiP) setting

- Maximises speed, acceleration and hydraulic performance of the truck
- Truck performance will not vary with the amount of load
- Grade and climbing speed are also increased
- Ideal for heavy-duty applications

Choose the optimum performance level to suit your application needs

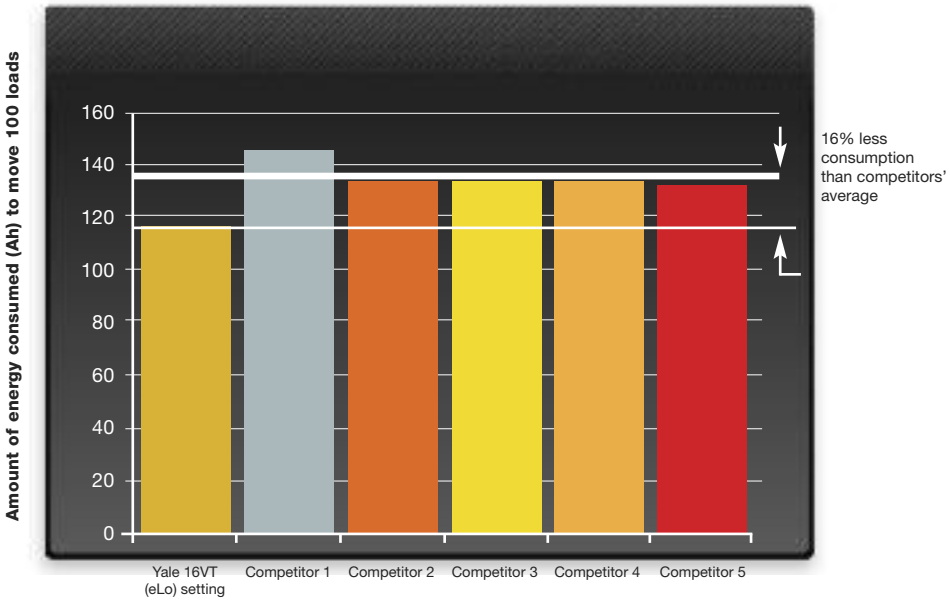
- Select one of four performance modes through the dash display: from Mode 1 (60% of maximum speed and acceleration) to Mode 4 (100% speed and acceleration)
- Password protected, the top speed and acceleration of Mode 4 can be set to each application's needs. Modes 1, 2 and 3 are automatically adjusted as percentages of Mode 4 setting.



The most energy efficient forklift trucks

Delivering the perfect balance of productivity and energy consumption

According to the VDI 2198 standard test, the ERP-VT series provides class-leading energy consumption in the eLo setting.



***Width of white line indicates amount of variation in tests**

Energy efficiency: Energy Low (eLo) setting

- The Energy Low (eLo) setting has the best energy balance on the market whilst delivering competitive productivity
- 16% less energy to move the same number of pallets as the competitive average

Serviceability

Setting the standard in service

The VT and VF series of trucks have been designed for ease of servicing at every stage. From intelligent onboard diagnostics and CANbus technology, to easily removable hydraulic modules, the VT and VF trucks set a new standard in serviceability and make first-time fixes the norm. And by reducing the need for repeat service visits, operation costs are lowered and profitability increased.

Yale's VT and VF trucks feature industry-leading serviceability

Onboard diagnostics: Accessed through an icon-driven menu on the large easy-to-read heads-up display, the onboard diagnostics make it easy to facilitate first-time fixes, maximising uptime.

CANbus communication: Facilitates easier and more accurate diagnostics while keeping wiring complexity to a minimum.

Individual controllers for each of the drive motors and the hydraulic pump-steer unit means the high expense of replacing 'combi-controllers' is avoided.

Easily removed drop-in hydraulic module: Hydraulic tank, filter, pump, motor and controller are in one place and are easily accessible by removing the rear cover.

1000-hour service intervals with hydraulic fluid change at 4000 hours.

"My warehouse is only effective when everything runs like clockwork. That's why I need to know that servicing my trucks is as quick and easy as possible."

Mr. Rainer Weixler – Production Director , Weidenhammer Packungen GmbH & Co KG

NACCO Materials Handling Limited
trading as Yale Europe Materials Handling

Flagship House, Reading Road North, Fleet, Hampshire GU51 4WD, England
Tel: +44 (0) 1252 770 700 Fax: +44 (0) 1252 770 784

www.yale-europe.com

Country of Registration: England. Company Registration Number: 02636775

BARCODE
TO GO HERE

CE Safety. These trucks conform to the current EC requirements.
Specification is subject to change without notice.

Publication part no. 258985891 Rev.00
Printed in the United Kingdom (1008??HG)