



**STRONG PARTNERS.  
TOUGH TRUCKS.™**

**FORTENS™**



## **LPG FORKLIFT TRUCKS**

**\$4.0-5.5FT FORTENS ADVANCE / FORTENS ADVANCE+**

**4 000-5 500 KG**



# FORTENS ADVANCE S4.0FT, S4.5FT, S5.5FT, S5.5FTS

<b>DISTINGUISHING MARK</b>	1.1	Manufacturer (abbreviation)	
	1.2	Manufacturer's type designation	
		Model	
		Engine	
		Transmission	
		Brake type	
	1.3	Drive: electric (battery or mains), diesel, petrol, LPG	
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker	
	1.5	Rated capacity/rated load	Q (t)
	1.6	Load centre distance	c (mm)
1.8	Load distance, centre of drive axle to fork	x (mm)	
1.9	Wheelbase	y (mm)	

<b>WEIGHTS</b>	2.1	Service weight	kg
	2.2	Axle loading laden, front/rear	kg
	2.3	Axle loading unladen, front/rear	kg

<b>TYRES/CHASSIS</b>	3.1	Tyres: L=pneumatic, V=solid, SE=pneumatic-shaped solid	
	3.2	Tyre size, front	
	3.3	Tyre size, rear	
	3.5	Wheels, number front/rear (x = driven wheels)	
	3.6	Tread, front	b <sub>10</sub> (mm)
	3.7	Tread, rear	b <sub>11</sub> (mm)

<b>DIMENSIONS</b>	4.1	Tilt of mast/fork carriage forward/backward	$\alpha / \beta$ (°)
	4.2	Height, mast lowered	h <sub>1</sub> (mm)
	4.3	Free lift $\uparrow$	h <sub>2</sub> (mm)
	4.4	Lift $\uparrow$	h <sub>3</sub> (mm)
	4.5	Height, mast extended ●	h <sub>4</sub> (mm)
	4.7	Height of overhead guard (cabin)	h <sub>6</sub> (mm)
	4.8	Seat height/stand height ●	h <sub>7</sub> (mm)
	4.12	Coupling height	h <sub>10</sub> (mm)
	4.19	Overall length	l <sub>1</sub> (mm)
	4.20	Length to face of forks	l <sub>2</sub> (mm)
	4.21	Overall width	b <sub>1</sub> (mm)
	4.22	Fork dimensions ISO 2331	s/e/l (mm)
	4.23	Fork carriage ISO 2328, class/type A, B	
	4.24	Fork carriage width ■	b <sub>3</sub> (mm)
	4.31	Ground clearance, laden, below mast	m <sub>1</sub> (mm)
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)
	4.33	Load dimension b <sub>12</sub> × l <sub>6</sub> crossways	b <sub>12</sub> × l <sub>6</sub> (mm)
	4.34	Aisle width predetermined load dimensions ◆	A <sub>21</sub> (mm)
	4.34.1	Aisle width for pallets 1000 × 1200 crossways ◆	A <sub>21</sub> (mm)
	4.34.2	Aisle width for pallets 800 × 1200 crossways ◆	A <sub>21</sub> (mm)
4.35	Turning radius	W <sub>9</sub> (mm)	
4.36	Internal turning radius	b <sub>13</sub> (mm)	
4.41	90° intersecting aisle (with pallet L = 1000mm × W = 1200mm)	(mm)	
4.42	Step Height (from ground to running board)	(mm)	
4.43	Step Height (between intermediate steps and floor)	(mm)	

<b>PERFORMANCE DATA</b>	5.1	Travel speed, laden/unladen	km/h
	5.1.1	Travel speed, laden/unladen, backwards	km/h
	5.2	Lift speed, laden/unladen	m/s
	5.3	Lowering speed, laden/unladen	m/s
	5.5	Drawbar pull, laden/unladen †	N
	5.7	Gradeability, laden/unladen ★	%
	5.9	Acceleration time, laden/unladen ⇄	s
	5.10	Service brake	

7.5	Fuel consumption according to VDI cycle	l/h or kg/h
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8.1	Type of drive unit	
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<b>ADDITIONAL DATA</b>	10.1	Operating pressure for attachments	bar
	10.2	Oil volume for attachments ◆	l/min
	10.3	Hydraulic oil tank, capacity	l
	10.4	Fuel tank, capacity	l
	10.7	Sound pressure level at the driver's seat ● ◆	dB (A)
	10.7.1	Sound power level during the workcycle ◆	dB (A)
	10.7.2	Guaranteed sound power 2000/14/EC	dB (A)
	10.8	Towing coupling, type DIN	

HYSTER		HYSTER		HYSTER		HYSTER	
S4.0FT		S4.5FT		S5.5FT		S5.5FTS	
Fortens Advance		Fortens Advance		Fortens Advance		Fortens Advance	
Kubota 3.8L		Kubota 3.8L		Kubota 3.8L		Kubota 3.8L	
DuraMatch		DuraMatch		DuraMatch		DuraMatch	
1-speed		1-speed		1-speed		1-speed	
Premium Wet Brakes		Premium Wet Brakes		Premium Wet Brakes		Premium Wet Brakes	
LPG		LPG		LPG		LPG	
Seated		Seated		Seated		Seated	
4.0		4.5		5.5		5.5	
500		600		600		600	
447		462		462		462	
1570		1790		1790		1790	

5795		6977		7595		7618	
8607	1188	10085	1392	11523	1572	11729	1389
2194	3601	2916	4061	2760	4835	2966	4652

V		V		V		V	
22x9x16		22x12x16		22x12x16		22x12x16	
18x7x12.1		18x8x12.1		18x8x12.1		18x8x12.1	
2x	2	2x	2	2x	2	2x	2
941		1015		1015		1015	
978		1004		1004		1004	

5		6		5		6		5		6	
2130		2135		2135		2135		2135		2135	
100		100		100		100		100		100	
3000		2740		2740		2740		2740		2740	
3780		3665		3665		3665		3665		3665	
2171		2175		2175		2175		2175		2175	
1221		1339		1339		1339		1339		1339	
367		371		371		371		371		371	
3630		3969		4061		3899		3899		3899	
2630		2769		2861		2699		2699		2699	
1170		1270		1320		1420		1320		1420	
50	125	1000	60	150	1200	60	150	1200	60	150	1200
III A		IV A		IV A		IV A		IV A		IV A	
1070		1070		1070		1070		1070		1070	
114		118		118		118		118		118	
152		156		156		156		156		156	
1200 x 1000		1200 x 1000		1200 x 1000		1200 x 1000		1200 x 1000		1200 x 1000	
3945		4109		4196		4037		4037		4037	
4145		4309		4396		4237		4237		4237	
4145		4309		4396		4237		4237		4237	
2298		2447		2534		2375		2375		2375	
675		762		762		762		762		762	
2051		2164		2211		2161		2161		2161	
392		396		396		396		396		396	
322		322		322		322		322		322	

18.1	18.3	17.8	18.1	17.7	18.1	17.7	18.1
18.1	18.3	17.8	18.1	17.7	18.1	17.7	18.1
0.61	0.62	0.56	0.57	0.56	0.57	0.56	0.57
0.55	0.47	0.51	0.42	0.51	0.42	0.51	0.42
31725	12804	34923	16916	34626	15999	34626	15999
36.8	14.1	32.6	18.7	28.2	17.7	28.2	17.7
4.3	4.9	4.2	4.9	4.3	5.1	4.3	5.1
Hydraulic		Hydraulic		Hydraulic		Hydraulic	

4.0	4.5	4.9	4.9
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Hydrodynamic	Hydrodynamic	Hydrodynamic	Hydrodynamic
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155	155	155	155
83.3	83.3	83.3	83.3
76.6	76.6	76.6	76.6
38.6	38.6	38.6	38.6
84	84	84	84
102	102	102	102
106	106	106	106
Pin	Pin	Pin	Pin

Specification data is per VDI 2198 December 2012

**EQUIPMENT AND WEIGHT:** Specification data based on 3050mm (S4.0FT) / 2800mm (S4.5FT - S5.5FTS) TOF 2 stage LFL mast with standard carriage, 1000mm (S4.0FT) / 1200mm (S4.5FT - S5.5FTS) forks with e-hydraulics.





# MAST AND CAPACITY INFORMATION

## MASTS S4.0FT

	Maximum fork height (mm)	Tilt		Overall lowered height (mm)	Overall Extended height (mm) ▽	Overall Extended height (mm) ✦	Free lift (top of forks) (mm)
		F	B				
2-Stage Limited Free Lift	3050	5°	6°	2135	3785 ▽	4285 ✦	150
	3650	5°	6°	2435	4385 ▽	4885 ✦	150
	4250	5°	6°	2735	4985 ▽	5485 ✦	150
2-Stage Full Free Lift	3075	5°	6°	2153	3860 ▽	4130 ✦	1355
3-Stage Full Free Lift	4415	5°	6°	2135	5200 ▽	5650 ✦	1355
	4950	5°	6°	2335	5735 ▽	6185 ✦	1555
	5550	5°	6°	2535	6335 ▽	6785 ✦	1755
	6000	5°	6°	2735	6785 ▽	7235 ✦	1955

## MASTS S4.5-5.5FTS

	Maximum fork height (mm)	Tilt		Overall lowered height (mm)	Overall Extended height (mm)	Overall Extended height (mm) ✦	Free lift (top of forks) (mm)
		F	B				
2-Stage Limited Free Lift	2800	5°	6°	2140	3660 ▽	4035 ✦	160
	3400	5°	6°	2440	4260 ▽	4635 ✦	160
	4000	5°	6°	2740	4860 ▽	5235 ✦	160
2-Stage Full Free Lift	2825	5°	6°	2140	3735 ▽	4060 ✦	1235
3-Stage Full Free Lift	4145	5°	6°	2140	5060 ▽	5380 ✦	1230
	4700	5°	6°	2340	5615 ▽	5935 ✦	1430
	5300	5°	6°	2540	6215 ▽	6535 ✦	1630

## S4.0FT – CAPACITY CHART in kg @ 500 mm load centre

Cushion Tyres			
	Maximum fork height (mm) ✦	Without sideshift	With sideshift
		S4.0FT	S4.0FT
2-Stage Limited Free Lift	3050	4000	4000
	3650	4000	4000
	4250	4000	4000
2-Stage Full Free Lift	3075	4000	4000
3-Stage Full Free Lift	4415	4000 ▶	3860 ▶
	4950	3890 ▶	3750 ▶
	5550	3760 ▶	3600 ▶
	6000	3640 ▶	3480 ▶

## S4.5-5.5FTS – CAPACITY CHART in kg @ 600 mm load centre

Cushion Tyres							
	Maximum fork height (mm) ✦	Without sideshift			With integral sideshift		
		S4.5FT	S5.5FT	S5.5FTS	S4.5FT	S5.5FT	S5.5FTS
2-Stage Limited Free Lift	2800	4500	5500	5500	4500	5500	5440 ▶
	3400	4500	5500	5500	4500	5500	5420 ▶
	4000	4500	5500	5500	4500	5500	5410 ▶
2-Stage Full Free Lift	2825	4500	5500	5500	4500	5480	5420
3-Stage Full Free Lift	4145	4500 ▶	5500 ▶	5500 ▶	4400 ▶	5290 ▶	5240 ▶
	4700	4500 ▶	5500 ▶	5490 ▶	4390 ▶	5280 ▶	5220 ▶
	5300	4380 ▶	5370 ▶	5290 ▶	4260 ▶	5140 ▶	5060 ▶

## NOTES

To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please use the Hy-Rater software.

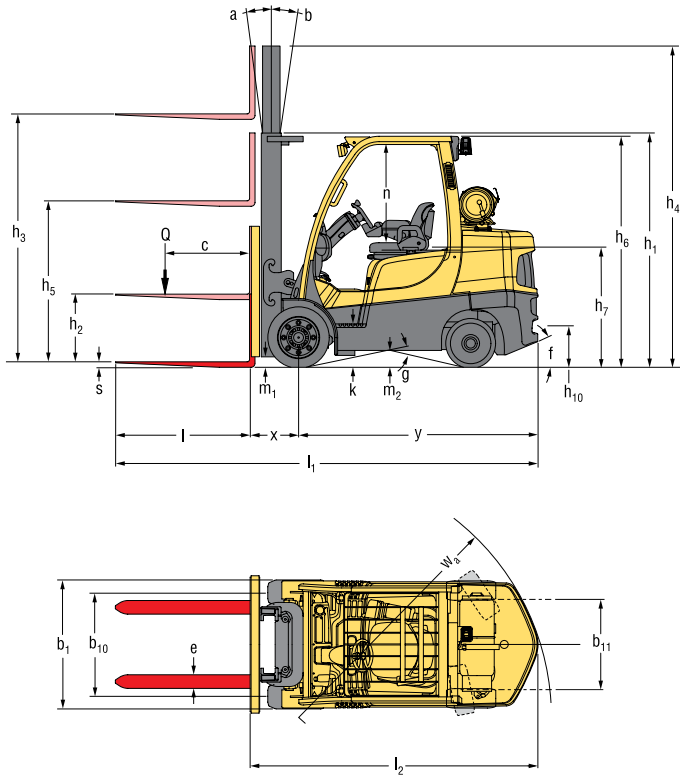
Specification data based on standard carriage, load backrest, and 1000mm (S4.0FT) / 1200mm (S4.5FT - S5.5FTS) forks.

The rated capacities shown are for masts in a vertical position on trucks equipped with standard or sideshift carriage, and nominal length forks. Masts above the maximum fork heights shown in the mast table are classified as high lift, and depending on the tyre/tread configuration may require reduced capacity, restricted back tilt or wide tread.

Values shown are for standard equipment. When using non-standard equipment these values may change. Please contact your Hyster dealer for information.



# TRUCK DIMENSIONS



= Centre of gravity of unladen truck

$$A_{st} = W_g + x + l_6 + a \text{ (see lines 4.34.1 \& 4.34.2)}$$

a = Minimum operating clearance

(VDI standard = 200 mm BITA recommendation = 300 mm)

$l_6$  = Load length

## NOTE:

Specifications are affected by the condition of the vehicle and how it is equipped, as well as the nature and condition of the operating area. Inform your dealer of the nature and condition of the intended operating area when purchasing your Hyster Truck.

- † Top of forks
- W/o load backrest, add 32mm with load backrest
- Full suspension seat in depressed position
- ▶ Standard /Wide
- Add 32 mm with load backrest
- ◆ Stacking aisle width (lines 4.34 & 4.34.1 & 4.34.2) are based on the V.D.I. standard calculation as shown on illustration. The British Industrial Truck Association recommends the addition of 100 mm to the total clearance (dimension a) for extra operating margin at the rear of the truck.
- † at 1.6 km/h
- \* at 4.8km/h. Gradeability figures are provided for comparison of tractive performance, but are not intended to endorse the operation of the vehicle on the stated inclines. Follow instructions in the operating manual regarding operation on inclines.
- ≡ to 15m (per VDI 2198 December 2012)
- Battery ampere hour (Ah) nominal capacity ratings are estimated.
- ◇ Variable
- ⊙ With and without cab.
- ◇  $L_{PAZ}$ , Measured according to the test cycles and based on the weighting values contained in EN12053
- ◇  $L_{VAZ}$ , Measured according to the test cycles and based on the weighting values contained in EN12053

## MAST TABLES:

- ▽ Without load backrest
- ◆ With load backrest
- ▶ Wide tread required

## POWERTRAINS TABLE:

- Battery ampere hour (Ah) nominal capacity ratings are estimated.

## NOTICE

Care must be exercised when handling elevated loads. When the carriage and/or load is elevated, truck stability is reduced. It is important that the mast tilt in either direction is kept to a minimum when loads are elevated.

Operators must be trained and must read, understand and follow the instructions contained in the Operating Manual.

All values are nominal values and they are subject to tolerances. For further information, please contact the manufacturer.

Hyster products are subject to change without notice. Lift trucks illustrated may feature optional equipment. Values may vary with alternative configurations.

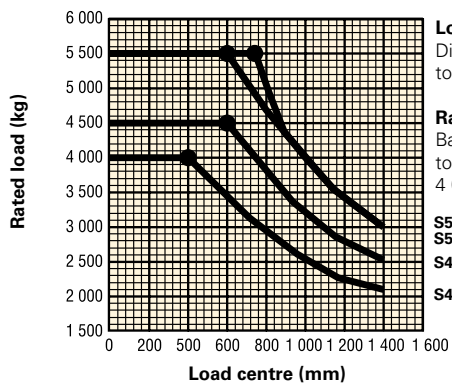
## CE Safety:

This truck conforms to the current EU requirements.

Dimensions (mm)	S4.0FT	S4.5FT	S5.5FT	S5.5FTS
f	40%	32%	32%	32%
g	22.7°	22°	21°	21°
k	391.5	395.5	395.5	395.5
n	1 062	1 062	1 062	1 062

# RATED CAPACITIES

## Standard carriage



### Load centre

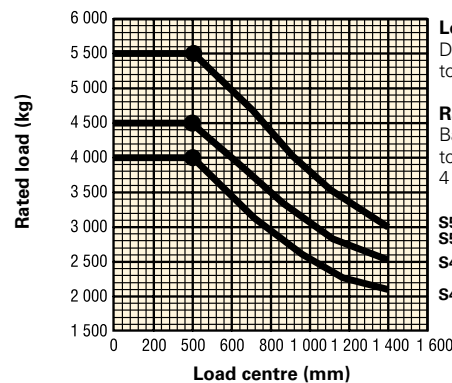
Distance from front of forks to centre of gravity of load.

### Rated load

Based on vertical masts up to 4 250mm (S4.0FT) and 4 000mm (S4.5-5.5FT)

S5.5FT  
S5.5FTS  
S4.5FT  
S4.0FT

## Integral sideshift carriage



### Load centre

Distance from front of forks to centre of gravity of load.

### Rated load

Based on vertical masts up to 4 250mm (S4.0FT) and 4 000mm (S4.5-5.5FT)

S5.5FT  
S5.5FTS  
S4.5FT  
S4.0FT

## POWERTRAINS

1.3	Drive: electric (battery or mains), diesel, petrol, LPG
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COMBUSTION-ENGINE	7.1	Engine manufacturer/type	
	7.2	Engine power according to ISO 1585	kW
	7.3	Rated speed	min-1
	7.3.1	Torque at 1/min	Nm/min-1
	7.4	Number of cylinders/displacement	(-)/cm <sup>3</sup>
	7.10	Battery voltage/nominal capacity	(V)/(Ah)

DRIVE MECHANISM	8.1	Type of drive unit	
	8.2	Manufacturer/type	
	8.6	Wheel drive/drive axle manufacturer/type	
	8.11	Service brake	
	8.12	Parking brake	

LPG SWB	LPG LWB
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Kubota WG3800	Kubota WG3800
54.9	67.8
1800	2200
300 /1000	300 /1000
4 / 3769	4 / 3769
12 / 88	12 / 88

Hydrodynamic	Hydrodynamic
NMHG/Electronic	NMHG/Electronic
Dana or NMHG/WBA	Dana or NMHG/WBA
Hydraulic	Hydraulic
Multi Disc Brake	Multi Disc Brake

## PRODUCT PACKAGES

Model / Bundle	S4.0FT			S4.5FT		
LPG	Engine	Transmission	Brakes	Engine	Transmission	Brakes
Fortens Advance	Kubota 3.8L	DuraMatch™ 1 speed	Premium Wet Brakes	Kubota 3.8L	DuraMatch™ 1 speed	Premium Wet Brakes
Fortens Advance+	Kubota 3.8L	DuraMatch™ 2 speed	Premium Wet Brakes	Kubota 3.8L	DuraMatch™ 2 speed	Premium Wet Brakes

Model / Bundle	S5.5FT			S5.5FTS		
LPG	Engine	Transmission	Brakes	Engine	Transmission	Brakes
Fortens Advance	Kubota 3.8L	DuraMatch™ 1 speed	Premium Wet Brakes	Kubota 3.8L	DuraMatch™ 1 speed	Premium Wet Brakes
Fortens Advance+	Kubota 3.8L	DuraMatch™ 2 speed	Premium Wet Brakes	Kubota 3.8L	DuraMatch™ 2 speed	Premium Wet Brakes

## PRODUCT FEATURES

The Fortens Advance and Fortens Advance+ trucks provide excellent performance for the most demanding of applications and are engineered for the lowest hourly operating cost. The mainframe, mast and powertrain are designed, tested and built for intensive heavy duty tasks either with forks or attachments.

### ■ The Kubota 3800 series engines

The Fortens Advance and Fortens Advance+ models feature the electronically controlled Kubota WG3800 LPG engine with 54.9 or 67.8kW.

- **The LPG Engine (WG 3800)** is derived from the diesel version and shares many of its operational characteristics that make it an ideal match for use in forklift trucks (high levels of torque at low rpm, low max rated speed, low noise and heavy duty robust construction).

The maximum engine power depends on the truck series and load centre:

Truck	Engine power	Fuel type
S4.0FT	54.9kw@2200rpm	LPG
S4.5FT – S5.5FTS	67.8kw@2200rpm	LPG

### Transmission

The Fortens Fortens Advance models feature the electronically controlled single-speed DuraMatch™ transmission, providing:

- **Auto Deceleration System (ADS)** automatically slows the truck when the accelerator pedal is released, and finally brings the truck to a stop, which helps to significantly extend brake life. In addition, this feature assists the driver to accurately position the truck in front of a load. There are 10 ADS settings, programmable via the dash display by a service technician, which deliver different braking characteristics, from very gradual to aggressive, to suit the needs of the application.
- **Controlled Power Reversal; the Pacesetter VSM™** controls the transmission to deliver smooth direction changes. The VSM reduces the throttle to slow the engine, initiates auto-deceleration to stop the truck, changes the transmission direction automatically and increases the throttle to accelerate the truck. The system virtually eliminates tyre spin and shock loads on the transmission and significantly increases tyre life. As with ADS, the system is programmable via the dash display by a service technician, with settings from 1 to 10, to suit the needs of the application.



## PRODUCT FEATURES (2)

- **Controlled Roll-Back on Ramp;** the transmission controls the rate of decent of the truck on a ramp, when the brake and throttle pedal are released, to provide maximum control on a grade and increase operator productivity.

The **Fortens Advance+** models are available with the electronically controlled two-speed transmission. This transmission, in addition to the above features:-

- **First Gear offers increased Drawbar Pull** for use on gradients
- **Second Gear provides maximum engine efficiency** in applications where longer travel distances are common.

**DuraMatch™** transmissions are available with **Auto-speed Hydraulics** which automatically increases engine speed on activation of the hydraulics, eliminating the need for inching when lifting the load.

All Fortens S4.0-5.5FT Series models are equipped with Oil-immersed brakes offering reduced maintenance and repair time and costs, which results in extended truck dependability and uptime.

All powertrains are controlled, protected and managed by the **Pacesetter VSM™** industrial onboard computer, featuring a CANbus communications network. This system permits adjustment and optimisation of the truck's performance, in addition to monitoring key functions. It enables quick, easy diagnostics, minimizing repair downtime and unnecessary parts swapping.

Hassle-Free Hydraulic systems, featuring Leak-free O-ring face seal fittings reduce leaks for enhanced reliability. Non-mechanical, Hall-Effect sensors and switches have been fitted and are designed to outlast the life of the truck.

The operator compartment features class-leading **Ergonomics** for maximum driver comfort and productivity.

- **Operator space** is optimised by an overhead guard design that achieves a generous floor space.
- **A full range of Cabs** with heating and optional Air Conditioning are available, including lowered cab for operation in containers etc.
- **The Easy-to-use 3-point entry** design of operator compartment has an open non-slip step with a height of just 39,5cm.
- The isolated drivetrain minimises the effect of powertrain vibration.
- The adjustable armrest that accompanies the TouchPoint™ **mini-lever module** features a contoured design, and - in addition to the hydraulic functions - features a horn and direction switch, ensuring that all key truck functions are within constant, easy reach.
- **The Rear grab handle** with horn button and optional swivel seat facilitates reverse driving.
- **An infinitely adjustable steering column,** 30 cm diameter steering wheel with spinner knob and full-suspension seat, enhance driver comfort.

The Hyster Fortens is the fastest and easiest lift truck to **Service:-**

- **Complete cowl-to-counterweight service access** and simplified layout of wiring and hydraulics offers greater access to components, which in turn decreases service time for un-scheduled repairs and regular maintenance.
- **Fast, colour-coded daily checks and diagnostic systems** can be managed via the dash display.
- **An Engine coolant, oil change and Hydraulic oil change** interval of 4,000 hours also contributes to reduced downtime.



# STRONG PARTNERS. TOUGH TRUCKS.™

## FOR DEMANDING OPERATIONS, EVERYWHERE.

Hyster supplies a complete range of warehouse equipment, IC and electric counterbalanced trucks, container handlers and reach stackers. Hyster is committed to being much more than a lift truck supplier.

Our aim is to offer a complete partnership capable of responding to the full spectrum of material handling issues: Whether you need professional consultancy on your fleet management, fully qualified service support, or reliable parts supply, you can depend on Hyster.

Our network of highly trained dealers provides expert, responsive local support. They can offer cost-effective finance packages and introduce effectively managed maintenance programmes to ensure that you get the best possible value. Our business is dealing with your material handling needs so you can focus on the success of your business today and in the future.



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


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