HYSTER™

STRONG PARTNERS. TOUGH TRUCKS.

FORTENS™

IC Counterbalanced Lift Trucks
S6.0-7.0FT Fortens / Fortens Advance

6 000 – 7 000 kg

Fortens S6.0FT, S7.0FT

CHARACTERISTICS	1.1	Manufacturer		HYSTER		HYSTER		HYSTER		HYSTER		1.1
	1.2	Model designation		S6.0FT		S6.0FT		S7.0FT		S7.0FT		1.2
		Model - Manufacturer designation		Fortens		Fortens		Fortens		Fortens		
		Engine / transmission		Cummins 4.5L 2-speed Powershift		GM 4.3L 2-speed Powershift		Cummins 4.5L 2-Speed Powershift		GM 4.3L 2-speed Powershift		
		Brake type		Wet Brakes		Wet Brakes		Wet Brakes		Wet Brakes		
	1.3	Power: battery, diesel, LPG, electric mains		Diesel		LPG		Diesel		LPG		1.3
	1.4	Operation: manual, pedestrian, stand, seat, orderpicker		Seat		Seat		Seat		Seat		1.4
	1.5	Load capacity	Q (kg)	6 000		6 000		7 000		7 000		1.5
	1.6	Load centre	c (mm)	600		600		600		600		1.6
	1.7	Load distance (load face)	x (mm)	500		500		500		500		1.7
	1.8	Wheelbase	y (mm)	1 830		1 830		1 830		1 830		1.8
WEIGHTS	2.1	Unladen weight	kg	8 803		8 712		9 317		9 226		2.1
	2.2	Axle loading with load, front/rear	kg	13 432	1 403	13 432	1 403	14 696	1 560	14 696	1 560	2.2
	2.3	Axle loading without load, front/rear	kg	3 998	4 714	3 998	4 714	3 863	5 362	3 863	5 362	2.3
WHEELS & TYRES	3.1	Tyres: L=pneumatic, V=solid, SE=pneumatic-shaped solid		V		V		V		V		3.1
	3.2	Tyre size, front		28 x 12 x 22		28 x 12 x 22		28 x 12 x 22		28 x 12 x 22		3.2
	3.3	Tyre size, rear		22 x 8 x 16		22 x 8 x 16		22 x 8 x 16		22 x 8 x 16		3.3
	3.5	Number of wheels, front/rear (X = driven)		2X	2	2X	2	2X	2	2X	2	3.5
	3.6	Track width, front	b_{10} (mm)	1 133		1 133		1 133		1 133		3.6
	3.7	Track width, rear	b_{11} (mm)	1 192		1 192		1 192		1 192		3.7
DIMENSIONS	4.1	Mast tilt, α = forward/β = back	degrees	6	10	6	10	6	10	6	10	4.1
	4.2	Height of mast, lowered	h_1 (mm)	2 697		2 697		2 697		2 697		4.2
	4.3	Free lift ¶	h_2 (mm)	100		100		100		100		4.3
	4.4	Lift height ¶	h_3 (mm)	3 340		3 340		3 340		3 340		4.4
	4.5	Height of mast, extended ✦	h_4 (mm)	4 575		4 575		4 575		4 575		4.5
	4.7	Overhead guard height ■	h_6 (mm)	2 302		2 302		2 302		2 302		4.7
	4.8	Seat height ○	h_7 (mm)	1 231		1 231		1 231		1 231		4.8
	4.12	Towing coupling height	h_{10} (mm)	388		388		388		388		4.12
	4.19	Overall length	l_1 (mm)	4 130		4 130		4 130		4 130		4.19
	4.20	Length to face of forks	l_2 (mm)	2 930		2 930		2 930		2 930		4.20
	4.21	Overall width, standard/dual	b_1 (mm)	1 438		1 438		1 438		1 438		4.21
	4.22	Fork dimensions	s/e/l (mm)	60	150 / 1 200	60	150 / 1 200	60	150 / 1 200	60	150 / 1 200	4.22
	4.23	Fork carriage DIN 15173. Class, A/B		IV A		IV A		IV A		IV A		4.23
	4.24	Fork carriage width ●	b_3 (mm)	1 219		1 219		1 219		1 219		4.24
	4.31	Ground clearance under mast, with load	m_1 (mm)	113		113		113		113		4.31
	4.32	Ground clearance, centre of wheelbase	m_2 (mm)	188		188		188		188		4.32
	4.33	Aisle width with pallets 1 000 mm x 1 200 mm wide ◆	Ast (mm)	4 364		4 364		4 364		4 364		4.33
	4.34	Aisle width with pallets 800 mm x 1 200 mm long ◆	Ast (mm)	4 510		4 510		4 510		4 510		4.34
	4.35	Outer turning radius	W_a (mm)	2 585		2 585		2 585		2 585		4.35
	4.36	Inner turning radius	b_{13} (mm)	108		108		108		108		4.36
PERFORMANCE	5.1	Travel speed with/without load	km/h	20,7	20,0	20,5	19,8	20,7	20,0	20,5	19,8	5.1
	5.2	Lifting speed with/without load (2-stage limited free lift)	m/sec	0,49	0,53	0,53	0,53	0,45	0,53	0,53	0,53	5.2
	5.3	Lowering speed with/without load (2-stage limited free lift)	m/sec	0,56	0,43	0,56	0,43	0,56	0,43	0,56	0,43	5.3
	5.5	Drawbar pull with/without load @ 1,6 km/h	N	35 900	20 100	39 500	20 100	35 600	19 200	39 200	19 200	5.5
	5.6	Maximum drawbar pull with/without load	N	47 100	20 100	48 300	20 100	46 900	19 200	48 100	19 200	5.6
	5.7	Gradeability with/without load @ 4,8 km/h †	%	15,8	24,0	17,6	24,0	14,1	21,6	15,9	21,6	5.7
	5.8	Maximum gradeability with/without load @ 1,6 km/h †	%	25,3	24,0	28,1	24,0	22,9	21,6	25,3	21,6	5.8
	5.10	Service brake		Hydraulic		Hydraulic		Hydraulic		Hydraulic		5.10
ENGINE	7.1	Engine manufacturer/type		Cummins		GM 4.3L		Cummins		GM 4.3L		7.1
	7.2	Engine output, in accordance with ISO 1585	kW	58		77		58		77		7.2
	7.3	Governed speed	rpm	2 050		2 400		2 050		2 400		7.3
	7.4	Number of cylinders/displacements	cm^3	4	4 500	6	4 302	4	4 500	6	4 302	7.4
OTHER	8.1	Drive control		Automatic		Automatic		Automatic		Automatic		8.1
	8.2	Working pressure for attachments (nominal relief pressure)	bar	153		153		153		153		8.2
	8.3	Oil flow for attachments (nominal) ⌑	l/min	83,3		83,3		83,3		83,3		8.3
	8.4	Average noise level at operator's ear (Lpaz) ◇	dB (A)	83		85		83		85		8.4
		Guaranteed sound power 2001/14/EC (Lwaz)	dB	108		109		108		109		
	8.5	Towing coupling type		Pin		Pin		Pin		Pin		8.5

Specification Data is based on VDI 2198

Equipment and weight:

Weights (line 2.1) are based on the following specifications:

Complete truck with 3 400 mm 2-stage limited free lift mast, standard carriage, 1 200 mm forks, e-hydraulics, overhead guard and standard cushion drive and steer tyres.

Fortens Advance **S6.0FT, S7.0FT**

CHARACTERISTICS	1.1	Manufacturer		HYSTER			HYSTER			HYSTER			HYSTER			1.1
	1.2	Model designation		S6.0FT			S6.0FT			S7.0FT			S7.0FT			1.2
		Model - Manufacturer designation		Fortens Advance			Fortens Advance			Fortens Advance			Fortens Advance			
		Engine / transmission		Cummins 4.5L DuraMatch3			GM 4.3L DuraMatch3			Cummins 4.5L DuraMatch3			GM 4.3L DuraMatch3			CHARACTERISTICS
		Brake type		Wet Brakes			Wet Brakes			Wet Brakes			Wet Brakes			
	1.3	Power: battery, diesel, LPG, electric mains		Diesel			LPG			Diesel			LPG			1.3
	1.4	Operation: manual, pedestrian, stand, seat, orderpicker		Seat			Seat			Seat			Seat			1.4
	1.5	Load capacity	Q (kg)	6 000			6 000			7 000			7 000			1.5
	1.6	Load centre	c (mm)	600			600			600			600			1.6
	1.7	Load distance (load face)	x (mm)	500			500			500			500			1.7
	1.8	Wheelbase	y (mm)	1 830			1 830			1 830			1 830			1.8
WEIGHTS	2.1	Unladen weight	kg	8 803			8 712			9 317			9 226			2.1
	2.2	Axle loading with load, front/rear	kg	13 432	1 403		13 432	1 403		14 696	1 560		14 696	1 560		2.2
	2.3	Axle loading without load, front/rear	kg	3 998	4 714		3 998	4 714		3 863	5 362		3 863	5 362		2.3
WHEELS & TYRES	3.1	Tyres: L=pneumatic, V=solid, SE=pneumatic-shaped solid		V			V			V			V			3.1
	3.2	Tyre size, front		28 x 12 x 22			28 x 12 x 22			28 x 12 x 22			28 x 12 x 22			3.2
	3.3	Tyre size, rear		22 x 8 x 16			22 x 8 x 16			22 x 8 x 16			22 x 8 x 16			3.3
	3.5	Number of wheels, front/rear (X = driven)		2X	2		2X	2		2X	2		2X	2		3.5
	3.6	Track width, front	b_{10} (mm)	1 133			1 133			1 133			1 133			3.6
	3.7	Track width, rear	b_{11} (mm)	1 192			1 192			1 192			1 192			3.7
DIMENSIONS	4.1	Mast tilt, α = forward/β = back	degrees	6	10		6	10		6	10		6	10		4.1
	4.2	Height of mast, lowered	h_1 (mm)	2 697			2 697			2 697			2 697			4.2
	4.3	Free lift ¶	h_2 (mm)	100			100			100			100			4.3
	4.4	Lift height ¶	h_3 (mm)	3 340			3 340			3 340			3 340			4.4
	4.5	Height of mast, extended ✦	h_4 (mm)	4 575			4 575			4 575			4 575			4.5
	4.7	Overhead guard height ■	h_6 (mm)	2 302			2 302			2 302			2 302			4.7
	4.8	Seat height ○	h_7 (mm)	1 231			1 231			1 231			1 231			4.8
	4.12	Towing coupling height	h_{10} (mm)	388			388			388			388			4.12
	4.19	Overall length	l_1 (mm)	4 130			4 130			4 130			4 130			4.19
	4.20	Length to face of forks	l_2 (mm)	2 930			2 930			2 930			2 930			4.20
	4.21	Overall width, standard/dual	b_1 (mm)	1 438			1 438			1 438			1 438			4.21
	4.22	Fork dimensions	s/e/l (mm)	60	150	1 200	60	150	1 200	60	150	1 200	60	150	1 200	4.22
	4.23	Fork carriage DIN 15173. Class, A/B		IV A			IV A			IV A			IV A			4.23
	4.24	Fork carriage width ●	b_3 (mm)	1 219			1 219			1 219			1 219			4.24
	4.31	Ground clearance under mast, with load	m_1 (mm)	113			113			113			113			4.31
	4.32	Ground clearance, centre of wheelbase	m_2 (mm)	188			188			188			188			4.32
	4.33	Aisle width with pallets 1 000 mm x 1 200 mm wide ◆	Ast (mm)	4 364			4 364			4 364			4 364			4.33
	4.34	Aisle width with pallets 800 mm x 1 200 mm long ◆	Ast (mm)	4 510			4 510			4 510			4 510			4.34
	4.35	Outer turning radius	W_a (mm)	2 585			2 585			2 585			2 585			4.35
	4.36	Inner turning radius	b_{13} (mm)	108			108			108			108			4.36
PERFORMANCE	5.1	Travel speed with/without load	km/h	20,9	20,2		21,3	20,6		20,9	20,2		21,3	20,6		5.1
	5.2	Lifting speed with/without load (2-stage limited free lift)	m/sec	0,49	0,53		0,53	0,53		0,45	0,53		0,53	0,53		5.2
	5.3	Lowering speed with/without load (2-stage limited free lift)	m/sec	0,56	0,43		0,56	0,43		0,56	0,43		0,56	0,43		5.3
	5.5	Drawbar pull with/without load @ 1,6 km/h	N	44 500	20 100		44 500	20 100		44 500	19 200		44 500	19 200		5.5
	5.6	Maximum drawbar pull with/without load	N	44 500	20 100		44 500	20 100		44 500	19 200		44 500	19 200		5.6
	5.7	Gradeability with/without load @ 4,8 km/h †	%	17,3	24,0		17,6	24,0		15,7	21,6		16,0	21,6		5.7
	5.8	Maximum gradeability with/without load @ 1,6 km/h †	%	32,0	24,0		32,0	24,0		29,1	21,6		29,1	21,6		5.8
	5.10	Service brake		Hydraulic			Hydraulic			Hydraulic			Hydraulic			5.10
ENGINE	7.1	Engine manufacturer/type		Cummins			GM 4.3L			Cummins			GM 4.3L			7.1
	7.2	Engine output, in accordance with ISO 1585	kW	58			77			58			77			7.2
	7.3	Governed speed	rpm	2 050			2 400			2 050			2 400			7.3
	7.4	Number of cylinders/displacements	cm^3	4	4 500		6	4 302		4	4 500		6	4 302		7.4
OTHER	8.1	Drive control		Automatic			Automatic			Automatic			Automatic			8.1
	8.2	Working pressure for attachments (nominal relief pressure)	bar	153			153			153			153			8.2
	8.3	Oil flow for attachments (nominal) ¤	l/min	83,3			83,3			83,3			83,3			8.3
	8.4	Average noise level at operator's ear (Lpaz) ◇	dB (A)	83			85			83			85			8.4
		Guaranteed sound power 2001/14/EC (Lwaz)	dB	108			109			108			109			
	8.5	Towing coupling type		Pin			Pin			Pin			Pin			8.5

Specification Data is based on VDI 2198

Equipment and weight:

Weights (line 2.1) are based on the following specifications:

Complete truck with 3 400 mm 2-stage limited free lift mast, standard carriage, 1 200 mm forks, e-hydraulics, overhead guard and standard cushion drive and steer tyres.

Mast and capacity information

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

Masts S6.0-7.0FT

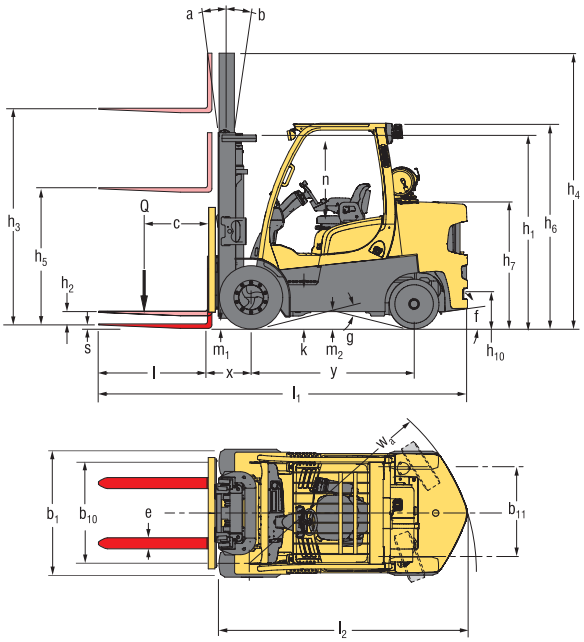
	Maximum fork height (mm)	Back tilt	Overall lowered height (mm)	Overall extended height (mm)	Free lift (top of forks) (mm)
2-Stage limited free lift	**2 400**	10°	2 197	3 632 ❖	160 ▽
	3 400	10°	2 697	4 632 ❖	160 ▽
	4 400	10°	3 197	5 632 ❖	160 ▽
3-Stage full free lift	**3 800**	6°	2 227	5 026 ❖	995 ▽
	4 700	6°	2 527	5 926 ❖	1 295 ▽
	5 600	6°	2 827	6 826 ❖	1 595 ▽
	6 200	6°	3 077	7 426 ❖	1 845 ▽

S6.0-7.0FT - Capacity chart in kg @ 600 mm load centre

		Cushion tyres					
	Maximum fork height (mm)	With standard carriage		With carriage + sideshift		With carriage + sideshifting fork positioner	
		S6.0FT	S7.0FT	S6.0FT	S7.0FT	S6.0FT	S7.0FT
2-Stage limited free lift	**2 400**	6 000	7 000	5 730	6 580	5 680	6 530
	3 400	6 000	7 000	5 700	6 550	5 650	6 500
	4 400	6 000	7 000	5 650	6 490	5 600	6 440
3-Stage full free lift	**3 800**	6 000	7 000	5 630	6 430	5 570	6 380
	4 700	6 000	7 000	5 600	6 400	5 550	6 350
	5 600	5 800	6 740	5 390	6 190	5 340	6 140

Note: To calculate truck capacities with alternative truck specifications to the ones shown in the above tables, please consult your Hyster dealer.
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.

Truck dimensions



= Centre of gravity of unladen truck

Ast = W_a + x + l_6 + a (see lines 4.33 & 4.34)

a = Minimum operating clearance

(V.D.I. 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. If these specifications are critical, the proposed application should be discussed with your dealer.

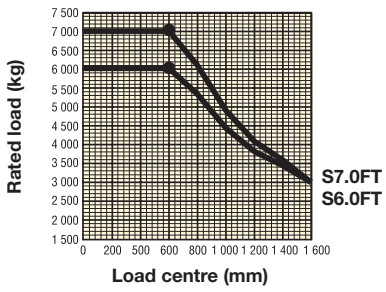
- ✦ Without load backrest
- ■ h_6 subject to +/- 5 mm tolerance
- ○ Full suspension seat in depressed position
- ¶ Bottom of forks
- ● Add 32 mm with load backrest
- ◆ Stacking aisle width (lines 4.33 & 4.34) are based on the V.D.I. standard calculation as shown on illustration. The British Industrial Truck Association recommends the addition of 100 mm to the total clearance (dimension a) for extra operating margin at the rear of the truck.
- † Gradeability figures (lines 5.7 & 5.8) 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.
- ⌑ Variable
- ◇ Measured according to the test cycles and based on the weighting values contained in EN12053
- ☎ Consult your Hyster lift truck dealer

Mast tables:

- ❖ With load backrest
- ▽ Without load backrest

Model	S6.0FT	S7.0FT
Dimensions (mm)		
f	42%	42%
g	24,9°	24,9°
k	531	531
n	1 062	1 062

Rated capacities



Load centre

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

Rated load

Based on vertical masts up to 4 700 mm.

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 mast tilt in either direction be kept to a minimum when loads are elevated. Operators must be trained and adhere to the instructions contained in the Operating Manual.

Hyster products are subject to change without notice.
Lift trucks illustrated may feature optional equipment.

CE **Safety:**
This truck conforms to the current EU requirements.

Product Packages

The Hyster Fortens™ range been designed to match the vast range of application requirements and business objectives that customers demand.

The S6.0-7.0FT Series is available in several truck packages, with multiple powertrain combinations to choose from, to best match operational demands. Each configuration offers improved efficiency, advanced dependability, lower cost of ownership and simple serviceability.

Model / Bundle	S6.0FT			S7.0FT		
Diesel	Engine	Transmission	Brakes	Engine	Transmission	Brakes
Fortens	Cummins 4.5L	Powershift Transmission 2-speed	Wet	Cummins 4.5L	Powershift Transmission 2-speed	Wet
Fortens Advance	Cummins 4.5L	DuraMatch™ Electronic 3-speed	Wet	Cummins 4.5L	DuraMatch™ Electronic 3-speed	Wet
Model / Bundle	S6.0FT			S7.0FT		
LPG	Engine	Transmission	Brakes	Engine	Transmission	Brakes
Fortens	GM 4.3L V6	Powershift Transmission 2-speed	Wet	GM 4.3L V6	Powershift Transmission 2-speed	Wet
Fortens Advance	GM 4.3L V6	DuraMatch™ Electronic 3-speed	Wet	GM 4.3L V6	DuraMatch™ Electronic 3-speed	Wet

Please refer to the Price List for full option configurations.

Product Features

The Standard Fortens model features a 2-speed (2F/2R) Electronic Powershift Transmission, with an optionally available **Soft Shift Power Reversal** function for handling delicate loads, which inhibits direction changes at speeds of over 3.5km/h.

The Fortens Advance models feature the electronically controlled 3-speed (3F/2R) **DuraMatch™ 3 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.
- **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.

First Gear offers **Increased Drawbar Pull** for use on gradients.

Second & Third Gears (when available) provide maximum engine efficiency in applications where longer travel distances are common.

The transmissions are compatible with the combi-cooler radiator and a superior counterweight tunnel design coupled with a "pusher" type fan, to provide the industry's best cooling.

The standard Oil-immersed brakes offer reduced maintenance & repair time and costs, which results in extended truck dependability and uptime. These trucks are ideally suited to applications in wet, dirty or corrosive environments, and ensure consistent braking performance over the lifetime of the truck. This is thanks to the sealed unit that houses and protects the brakes, so preventing contaminants and damage.

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, thanks to a new overhead guard design and significantly more floor space.
- The Easy-to-use 3-point entry design of operator compartment has an open non-slip step with a height of just 53,1 cm.
- The isolated drivetrain minimises the effect of powertrain vibration.
- The adjustable armrest that accompanies the TouchPoint™ or TouchControl™ E-hydraulic configurations moves with the seat and telescopes forward.
- The Rear grab handle with horn button 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 a simplified layout of wiring and hydraulics offers greater access to components, which in turn decreases service time for unscheduled repairs and regular maintenance.
- Fast, colour-coded daily checks and diagnostic systems can be managed via the dash display.
- An Engine coolant 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 product range, including Warehouse trucks, 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 materials 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 materials handling needs so you can focus on the success of your business today and in the future.

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