



**STRONG PARTNERS.
TOUGH TRUCKS.™**



EMPTY CONTAINER HANDLERS

H16-22XM-12EC

7 000 - 9 000 KG @ 1220MM



> BUILT ON EXPERIENCE

The H16-22XM-12EC series benefit from Hyster's long experience in designing and building high-stacking empty container handlers. These EC handling machines offer fastest handling, reliable proven components, and give an excellent return on your investment.



Increased handling flexibility is provided by the empty container handling spreader, featuring 'reefer correction' as standard, and a choice of several different container engagement systems, for fast handling of single or double containers.

This will ensure that Hyster continues to meet your needs for increased productivity and lowest cost of ownership.



> EXTRA VALUE FEATURES



The H16-22XM-12EC range offers impressive extra value, in an all-in-one package:

- **Lifting speeds** are class leading: The practical 4- mode average speed (with the 172kW / 230hp Stage IIIA engine) is a fantastic 0.52 m/sec, and this even when handling double containers.
- The unique **Hyster '1 to 4' lift ratio mast** contributes to the high lift speeds, and features short and stable lift cylinders.
- Design team of Hyster BTDC managed to design **one of the stables empty container handling machines** in the market by balancing the machine moment vs. load moment. The optional available 4.345 mm wide axle vs. the standard 4.120 mm wide axle provides even more side stability if required.
- **Rear-mounted cab** for a more comfortable viewing angle during high stacking of containers.
- Hyster '**Vista**' cab is state of the art in driver comfort, ergonomics, low noise and visibility. The noise level is just 70dB(A) Leq at driver's ear and air conditioning is available as an option. The cab tilts for easy service access.
- The 6.7 litre Cummins diesel engine conforms to the latest EU emissions regulations for NRMM (Non-Road Mobile Machinery).
- The 3-speed **auto-shift** transmission has a protective lock-out on forward-reverse shifting.
- Strong and wide drive axle with **oil immersed** (wet) disc brakes.
- Engine and transmission **protection** systems.
- **Tropical cooling** package is standard - up to 50°C for normal operation and up to 45°C for heavy duty operation.
- The Hyster ECH side-lift container spreader comes standard with '**reefer correction**' and a choice of several '**container engagement**' systems allows to handle all common container sizes. **LED indicator lights**, on the spreader and in the cab roof are standard equipment, informing the operator at any time about spreader status.
- Large **14.00 x 24** tyres as standard, for improved tyre life and lower running costs.

> STRENGTH & DURABILITY



- The frame is immensely strong with 16 mm thick frame members and massive front axle supports. The tilt cylinder anchors are tied directly into the rear frame.
- The drive axles with 4.120 or optional 4.345 mm provides stability and durability; whilst the oil immersed (wet) disc brakes reduce maintenance requirements.
- The hydrodynamic 3-speed transmission is controlled by APC200, providing automatically soft gear shifting, a protective forward-reverse shifting lock-out and a transmission protective device.
- The Hyster 'sandwich' type steer axle, with a single cylinder and non-adjustable tie rods is renowned for its long life and low maintenance.
- Large 14.00 x 24 wheels on all models, offer long tyre life for low running costs.



> POWER & PERFORMANCE

Clean engine power is provided by the 6.7 litre 6-cylinder Cummins QSB6 industrial diesel engine, with turbocharger and charge air cooler.

- Different engine configurations ensure that the exhaust emissions conform to the Stage IIIA or Stage IIIB emissions standard for NRMM (Non-Road Mobile Machinery).
- The industrial rating offers extra durability for long periods of peak power operation.
- Engine protection system features initial engine derating and finally engine stop function.
- Equipped with a two-stage heavy-duty air filter, plus a maintenance-free cyclonic pre-cleaner, suitable for dusty operating environments.
- Fuel tank 323 litres (4.000 mm wheel base) or 367 litres (4.500 mm wheel base) allowing a 3-shift operation without re-fill.
- Anti-corrosive (aluminized steel) exhaust system.

STAGE IIIB ENGINE:

For use mainly within EU (European Union) countries, trucks with Stage IIIB diesel engines have significantly reduced exhaust gas emissions. Also by applying Hyster Intelligent Design criteria, these trucks are not only cleaner running but also more economical, achieving up to a 15% fuel saving.

- Available with all H16-22XM-12EC models, the new Stage IIIB compliant Cummins QSB6.7L, 6-cylinder 6.7 litre industrial diesel engine with variable turbo and intercooler has a maximum performance of 172 kW / 230 Hp at 1800 rpm and a maximum torque of 949 Nm at 1400 rpm.
- The cooling on demand system use only power if needed and save furthermore the overall fuel consumption.

- The transmission available as standard with the engine is the TE 17 series, featuring 3-speeds with APC200 "Soft-shift" automatic gear shifting, protective forward-reverse shifting lock-out and transmission protection system. Also fitted is a separate transmission oil cooler and audible alarm when in reverse gear.

STAGE IIIA ENGINES:

This diesel engine conforms to Stage IIIA emission standards and will be supplied into markets where the NRMM (Non Road Mobile Machinery) Stage IIIB legislation does not apply.

H16-XM-12EC Single container handler:

- Engine performance is 145 kW / 197 Hp at 1800rpm, maximum torque is 931 Nm at 1400 rpm.
- This 145 kW engine is combined with the S.O.H. (Spicer Off-Highway) TE-13 powershift transmission, with 3-speeds with APC200 "Soft-shift" automatic gear shifting, protective forward-reverse shifting lock-out, and transmission protection system. Also fitted is a specific oil cooler and audible alarm when in reverse gear.

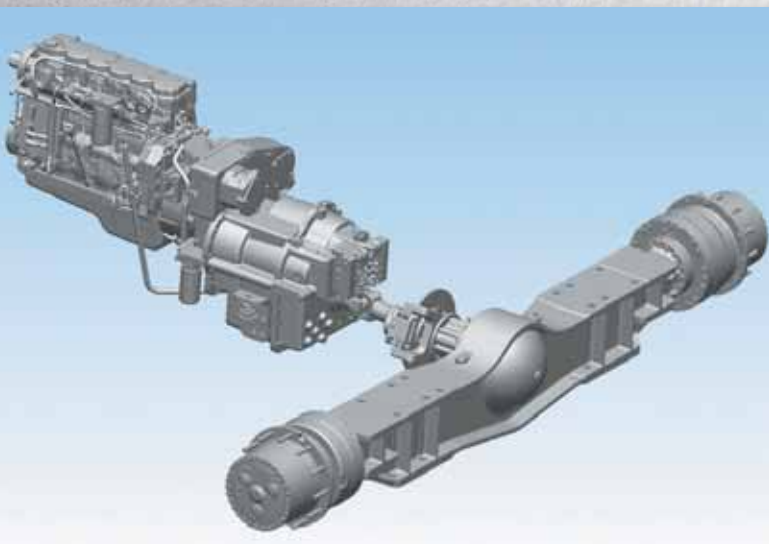
H18XM-12EC single handler, with 7000 and 8500 kg capacity and H22XM-12EC:

- Engine performance is 172 kW / 230 Hp at only 1800 rpm, with maximum torque of 949 Nm at 1400 rpm. Combined with the S.O.H. (Spicer Off-Highway) TE-17 3-speed powershift transmission, also with APC200 "Soft-shift" auto shift, forwardreverse lock-out, and transmission protection. Also fitted is a dedicated oil cooler and an audible alarm in reverse.

Optional Stage IIIA power package for H16-XM-12EC Single container handler:

- The 172 kW engine and TE-17 transmission package, instead of the standard 145 kW and TE-13 combination.

NOTE: A Stage IIIB engine must run on Ultra Low Sulphur Diesel (ULSD) fuel, with a maximum of 15 ppm sulphur content. Diesel fuel with a higher sulphur content than 15 ppm will compromise the emissions performance of the Stage IIIB engine and may result in damage to components.





COOL

- The H16-22XM-12EC machines have a tropical cooling system which makes them suitable to work in ambient temperatures up to 50°C in normal application and 45°C in heavy duty application.
- The unique 'side-by-side' 3-piece radiator cooler block for engine (water and intercooler) and transmission is efficient and easy to clean. A 'puller' type fan draws in cleaner air from the top of the machine.
- Cooling on demand, for the brakes and hydraulic system, mounted at the front of the machine, is provided by electrical driven 3-fan system which reduces both noise and power consumption during cooling.

FAST HANDLING

- Lifting speeds are class leading: The practical 5-mode average lifting speed (with the 172kW / 230hp Stage IIIA engine) is a fantastic 0.52 m/sec. And this also when handling double containers. Average of five lifting modes:
 - Unladen lift speed = 0.55 m/sec.
 - Full laden lift speed = 0.52 m/sec.
 - 70% laden load lift speed = 0.54 m/sec.
 - Unladen lowering speed = 0.47 m/sec.
 - Laden lowering speed = 0.49 m/sec.
- Travel speeds are very productive too, with a maximum of 25 to 30 km/h., depending on model and engine choice.

> ERGONOMIC DESIGN

The EC series features the Hyster 'Vista' cab, which gives the optimum ergonomic operator environment, and focuses on maximising driver comfort and visibility for maximum productivity.

- The large windows, fitted with tinted safety glass, offer excellent all-round visibility. This is further enhanced by a filtered fresh air inlet, sliding windows, an effective heater and defrosters, wipers with washers on front, top and rear screens, especially in poor weather conditions.
- Optional air-conditioning is integrated into the heating and ventilation system, with manual temperature control or climate control. Sunshade screens are fitted on the top and rear windows.
- The joystick gives intuitive control of mast lift, tilt and spreader functions: Sideshift, Telescope 20'-40', Optional PPS, Twistlocks unlocking (locking is automatic).
- Full-suspension, fully adjustable driver's seat with a high backrest, seat belt, seat switch for park brake warning buzzer and operator presence system.
- Map reading light, extra air circulation fan are also optional to choose.



- Adjustable steering column, power-assisted steering and lever controls, push-button parking brake and conveniently positioned instruments.
- Responsive, fully hydraulic brakes and automotive type pedal layout further contribute to driver comfort.
- Rear view mirrors inside the cab, and extra rear view mirrors on the front fenders.
- The comprehensively equipped operator's cab, mounted on isolators, has an insulated twinlayer floor to help achieve low noise levels. The noise level is just 70dB(A) Leq at driver's ear if the truck is equipped with stage IIIB engine, 74dB(AB) if with stage IIIA engine.

> OUTSTANDING VISIBILITY

- The operator compartment is mounted at the rear of the machine, for a comfortable viewing angle during high stacking of containers.
- Available on both the 5/6-high stackers (H16XM-12EC, 4.0 m wheelbase) and the 6/7-high stackers (H18-22.00XM-12EC, 4.5m wheelbase) where the cab is an extra 0.5m to the rear.
- Operator visibility during high stacking from the rear-mounted cab position, is also enhanced by the curved front window, the strong yet slim-line cab construction, the 'wave pattern' overhead guard, plus wipers on the front, top and rear screen (with double blade at the front).
- The ultra-wide mast (1260mm between inner channels) adds to the excellent overall visibility.
- The lift cylinders are also uniquely rear-mounted (behind the mast channels) for optimum visibility.
- Indicator lights for the container engagement functions are mounted on the spreader and also conveniently placed in the cab's roof.
- The 'state of the art' Hyster 'Vista' cab is available with air conditioning and sliding sunshade screens on the top and rear window.
- Rear view mirrors inside the cab, and extra rear view mirrors on the front fenders are available.
- The truck is equipped with a comprehensive set of road and work lights and an orange strobe light. See full details under Lights.





> UNIQUE '1 TO 4' HYSTER 'VISTA' MAST



- Ultra-wide mast construction, for torsional rigidity and also excellent visibility (distance of 1260 mm in between the inner mast channels).
- This stable Hyster 'Vista' mast has a unique '1 to 4' lift ratio. On these EC trucks with their extremely high lift heights, the Hyster '1 to 4' design results in halving the length of the lift cylinders, thereby offering excellent durability of the cylinder bearings and seals.
- The tilt cylinders are high-mounted on the mast for added rigidity and truck stability.
- A hydraulic accumulator in the hoist system, to cushion the load carried, is standard equipment.

> SPREADER CHARACTERISTICS



Hyster ECH side-lift 20'-40' telescopic **spreader characteristics:**

- Low profile main beam, with the horizontal telescoping beams sliding inside each other (not stacked on top of each other). This design results in excellent forward visibility towards the spreader's engagement points, particularly at high lift heights.
- **Sideshift** movement is a generous **+/- 600 mm** (1200 mm total) for operational flexibility and provides for 'reefer correction' possibility.
- **Spreader 'Articulation'**: Ample mechanical sideways articulation, by the 225 mm floating (up/down) movement of the spreader vertical end beams. Facilitates handling of containers on / from a sloping surface.
- 2 LED work lights on the spreader, pointing to the engagement heads, 2 LED work lights, integrated into the vertical end beams, pointing to container bottom or trailer chassis while loading.

Comprehensive indication and support systems:

- **LED Indicator lights** (red, 2x orange and green) to signal spreader engagement, are on the **spreader and** in the **cab**.

Orange left-hand = landed,
Green = locked,
Red = unlocked,
Orange right-hand = landed.

The lights panel in the cab roof also has a blue light signalling the mast lift interrupt function.
- **Mast over-lowering interrupt** prevents further lowering of the mast when the spreader is landed on a container. The function is signalled by a blue warning light in the cab. To eliminate slacking of the header hoses, cables and lift-chains and to reduce shocks on the spreader.



For Twistlocks versions only
(586TB, 588TB and 589TB):

- **Automatic locking.** Automatically turns the (Vertical) twistlocks to the locked position when the spreader is properly landed on the container(s). Unlocking is always done manually by a switch in the cab.
- **Twistlocks interlock** (mechanical) to help prevent;
 - a. Picking-up a container on less than two corners,
 - b. Unlocking when carrying a container.
- **Lift interrupt** cuts the lift mode if the twistlocks are not in a fully 'closed' / 'open' position. The function is signalled by a blue warning light in the cab.
- Container counter on the spreader, recording the number of containers locked. This facility helps to measure productivity and to schedule periodic maintenance.



> CONTAINER ENGAGEMENT SYSTEMS

The ECH side-lift 20'-40' telescopic spreader is available with a choice of three 'container engagement' systems, to suit individual user requirements:

To handle single containers:

1.0 The 586TB vertical twistlocks with **removable block** for **8' up to 2.550 mm deep ISO containers**.

- Automatic twistlocks locking, Indicator lights, Twistlocks interlock function, Lift interrupt function, Container-counter.

1.1 The 588TB vertical twistlocks for **standard ISO containers**

- Automatic twistlocks locking, Indicator lights, Twistlocks interlock function, Lift interrupt function, Container-counter.

1.2 The 589 vertical twistlocks **with movable head** for ISO 8' up to 2.600 mm wide "CPC" (**C**ellular **P**allet-wide **C**ontainers).

- Automatic twistlocks locking, Indicator lights, Twistlocks interlock function, Lift interrupt function, Container-counter.

For handling double and single containers:

To meet the actual ISO 3691-1 Norm, who requires a maximum speed of 10km/h for unlocked container handling, the 584L series is equipped with sensors to fulfil the task.

2.0 584LA Hooks and side-clamps

- Hooks with additional Side-clamps, for one or two containers. Clamping function is non-automatic. The spreader does not recognize if a container is laden. No speed limitation is applied. This spreader is for those countries who does not need to meet the ISO 3691-1 Norm.

2.1 584LB Hooks and side-clamps

- Hooks with additional Side-clamps, for one or two containers. Clamping function is non-automatic. The spreader does recognize if a container is laden. Speed limitation 10 km/h is always applied.

2.2 584LD Hooks and side-clamps

- Hooks with additional Side-clamps, for one or two containers. Clamping function is non-automatic. The spreader does recognize if one or two containers is (are) laden. Speed limitation 10 km/h is applied as long the side clamps are not in locked position.

2.3 584LF Hooks and side-clamps

- Hooks with additional Side-clamps, for one or two containers. Clamping function is non-automatic. The spreader does recognize if 1 or 2 containers is (are) laden. Speed limitation 10 km/h is applied as long the side clamps are not in locked position. For handling one 45' container, the hook is hydraulically raised and will locked into the container casting to allow maximum travel speed.
- Clamps protrude 320 mm on each side of spreader. 584LA – 584LD not suitable for 45' container(s).

3.0 582LA double horizontal twistlocks

- Spreader sides are 'flush' with container(s), allows entry into tightly spaced container block stacks.
- Suitable for 45' containers with 40' ISO pockets.
- Manual locking of four twistlocks, Twistlocks interlock function, Lift interrupt function, Container counter.
- PPS (Powered Pile Slope) function
PPS is a hydraulic powered sideways articulation of the ECH spreader, of +/- 6° in addition to the standard mechanical articulation.



Optional: PPS (Powered Pile Slope) function

- The PPS is a hydraulic powered sideways articulation of the ECH spreader, of +/- 6 degrees (in addition to the standard mechanical articulation).

> OTHER FEATURES

HIGH PERFORMANCE HYDRAULICS

- Efficient and well-sized hydraulic components result in the fastest lifting speed: a tremendous 52 cm/sec. under full load. And this can be achieved with the smallest Stage IIIA engine power (145 kW) available, providing excellent fuel efficiency.
- An hydraulic accumulator in the hoist system cushions shocks caused by the vertical movement of the spreader and container(s), and helps to reduce dynamic peak loading on the lift chains.
- Hydraulic oil tank with generous 400 litre capacity.
- Triple hydraulic oil cooler with ample capacity, mounted at the front of the machine.
- Leak-free O-ring face hydraulic fittings.

BRAKES

- Service brake: front, oil-immersed (wet) disc brakes. Large oil cooler and a separate 10 micron brake oil filter. The brake system is fully hydraulic and charged by an accumulator (no air system).
- Parking brake: spring actuated and hydraulically released, on the drive-line, automatically applied when pressure falls below 50 bar. The transmission is disengaged when the parking brake is applied.



WHEELS

- Large 14.00 x 24 size tyres are fitted for improved tyre life and lower running costs. Bias pneumatic lug tread tyres are standard. Options: radial pneumatic lug tread tyres, or solid (pneumatic shaped) lug tread tyres.
- Note: an hydraulic accumulator in hoist system, which acts to cushion the load, is fitted with all tyre choices.

ELECTRICAL SYSTEM

- 70 A alternator (Stage IIIA engine)
120 A alternator (Stage IIIB),
24 V system / 102 Ah Battery (20 hr).
- Battery master switch.
- 'CANbus' connection in the cab, for engine, transmission, and instrument cluster.

LIGHTS

A complete light kit is fitted:

- 4 front work lights (to 20' and 40' position) on the cab,
 - 2 front drive lights on the front fenders,
 - 2 rear work/drive lights on the cab,
 - 2 combination tail & stop & rear driving lights,
 - 4 direction indicators with hazard switch.
 - Orange strobe light on the cab.
- and:
- 4 LED work lights on the ECH spreader.

INSTRUMENTS/ACCESSORIES

- Warning lights: engine oil pressure, transmission oil pressure, transmission oil temperature, battery discharge indicator, low brake oil pressure, parking brake on.
- Gauges: engine coolant temperature, fuel, transmission oil temperature, voltmeter, engine oil pressure.
- Other indicators: hour meter, low brake pressure buzzer, combination key-type ignition/starter switch with starter lock out, reverse warning alarm.



> EASE OF SERVICING

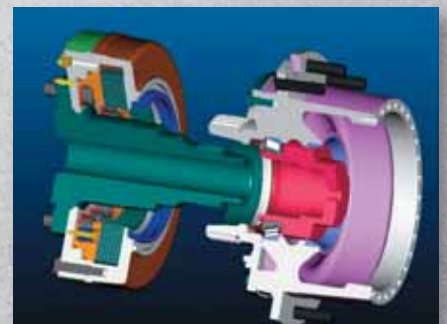
- The hydraulic oil tank features a gauge for oil level as well as magnetic drain plugs.
- The rearwards tilting cab is electrically powered.
- In combination with a forward opening spring assisted engine hood and two quickly removable (lightweight polyester) covers over the hydraulics, this provides truly excellent access for service work.



> STANDARD EQUIPMENT HIGHLIGHTS



- Tyres 14.00 x 24, Bias ply (diagonal) pneumatics.
- Wide drive axle 4.120 m overall width.
- Oil-immersed (wet) disc brakes.
- Tropical cooling (of powertrain and hydraulic system) for up to 50° C. ambient.
- Different engine configurations ensure that the exhaust emissions conform to the Stage IIIA or Stage IIIB emissions standard for NRMM (Non-Road Mobile Machinery).
- Engine and transmission protection systems.
- Aluminized steel anti-corrosive exhaust system
- Autoshift transmission, also with forward-reverse shifting protection.
- Joystick for intuitive control of mast and spreader functions
- Full-suspension seat with a height-adjustable backrest, two inside mirrors, two mirrors outside.
- Rearwards tilting cab for service access.
- Hyster ultra-wide 'Vista' lift mast with '1 to 4' lift ratio (see page 15).
- High mounted tilt cylinders.
- Hydraulic accumulator in the hoist system, acting as load shock absorber.
- EC spreader with 'reefer correction' function, by +/- 600 mm side shift.



> OPTIONAL EQUIPMENT



- **Extra Stage IIIA power package** for H16-XM-12EC
Single container handlers only:
172 kW / 230 Hp engine & TE-17 transmission, instead of standard 145 kW / 197 Hp engine & TE-13.
- **Tyres** 14.00 x 24: **Radial** pneumatics, or (Pneumatic Shaped) **Solids**.
- **Extra Wide** drive axle 4.345 mm overall width.
- **Spare wheel** (complete tyre and rim).
- **Automatic greasing** system.
- **Mud flaps** on the rear fenders.
- **Wheel nut protection** rings, on the steer wheels.
- **Special colour(s)** RAL paint.
- **Travel Speed Limiter**, with / without load to a maximum speed of 10, 16 or 20 km/h.
- **Storage box** (for container locks) on the running board, right-hand side.
- **Tyre Saver Front Axle** greatly extends tyre life and gives major operational tyre cost savings.
- **Engine pre-heater** (electric, 220V).

In-Cab / Operator convenience items:

- **Air-conditioning system** is integrated into the heating and ventilation system. It is available with either manual temperature control or climate control. Sunshade screens are fitted on the top and rear windows.
- **Reading light**.
- **Top and rear sunscreens** for non-air-conditioning equipped cab.
- **Air suspended seat**, instead of mechanically suspended seat.
- **Deluxe air suspended seat**, instead of mechanically suspended seat. Also available with seat heating.
- **Trainer seat** (small extra seat cushion).
- **Support stand** with mounting plate, to fit computer terminal or communication equipment.
- **Converter:** 24 Volt DC to 12 Volt DC.
- **H.I.D.** ('High Intensity Discharge' xenon) **work lights**, (4 x on the cab and 1 x on the rear of the cab), instead of standard Halogen lights.

- **4 drive lights** instead two on front fenders.

On the ECH spreader:

- **Three types of container engagement systems.**
See Spreader Characteristics.
- **30' Stop** (electro-hydraulic) of the telescopic movement.
- **'Powered Pile Slope'** (PPS) function. For full details see Spreader Characteristics.
- Only for 'Vertical Twistlocks': Spreader heads with hydraulic forward **Reach / Retract function**. To also handle some approx. 2.45-2.60 m wide "CPC" (**C**ellular **P**allet-wide **C**ontainers).





H16-22XM-12EC

DISTINGUISHING MARK	1.1	Manufacturer	HYSTER		HYSTER		HYSTER		HYSTER	
	1.2	Manufacturer's type designation	H16XM-12EC		H16XM-12EC		H18XM-12EC		H18XM-12EC	
	1.3	Power: battery, diesel, LPG, electric mains	Diesel		Diesel		Diesel		Diesel	
	1.4	Operation: manual, pedestrian, stand, seat, orderpicker	Seat		Seat		Seat		Seat	
	1.5	Load capacity Q (kg)	7 000		7 000		7 000		8 500	
	1.6	Load centre c (mm)	1 220		1 220		1 220		1 220	
	1.8	Load distance without (with) PPS ▲ x (mm)	1261		1261		1261		1261	
	1.9	Wheelbase y (mm)	4 000		4 000		4 500		4 500	
	1.10	Container Stacking Height 8'6" / 9'6"	6 high	5 high	6 high	5 high	6 high	5 high	6 high	5 high
	WEIGHTS	2.1	Unladen weight without PPS ¶ kg	32,480		32,480		33,520		33,797
2.2		Axle loading laden, front/rear ¶ kg	32,935	6,545	32,935	6,545	33,343	7,177	35,741	6,556
2.3		Axle loading unladen load, front/rear ¶ kg	21,595	10,885	21,595	10,885	22,485	11,035	22,662	11,135
TYRES/CHASSIS	3.1	Tyres: L=pneumatic, V=solid, SE=pneumatic-shaped solid	L/SE		L/SE		L/SE		L/SE	
	3.2	Tyre size, front (min.)	14,00 x 24		14,00 x 24		14,00 x 24		14,00 x 24	
	3.3	Tyre size, rear (min.)	14,00 x 24		14,00 x 24		14,00 x 24		14,00 x 24	
	3.5	Number of wheels, front/rear (X = driven)	4X	2	4X	2	4X	2	4X	2
	3.6	Track width, front b ₁₀ (mm)	3 286		3 286		3 286		3 286	
3.7	Track width, rear b ₁₁ (mm)	2 356		2 356		2 356		2 356		
DIMENSIONS	4.1	Tilt of mast/fork carriage forward/backward α / β (°)	4	4	4	4	4	3	4	3
	4.2	Height, mast lowered h ₁ (mm)	9,458		9,458		10,758		10,758	
	4.3	Free lift †† h ₂ (mm)	0		0		0		0	
	4.4	Lift †† h ₃ (mm)	13,850		13,850		16,450		16,450	
	4.5	Height, extended (vertical Twistlocks) h ₄ (mm)	16,436		16,436		19,036		19,036	
	4.7	Height of cabin ⊙ h ₅ (mm)	3,806		3,806		3,806		3,806	
	4.8	Seat height/stand height ⊙● h ₇ (mm)	2,627		2,627		2,627		2,627	
	4.12	Coupling height h ₁₀ (mm)	N/A		N/A		N/A		N/A	
	4.15	Height, spreader lowered (vertical Twistlocks) h ₁₃ (mm)	2,263		2,263		2,263		2,263	
	4.17	Overhang l ₅ (mm)	963		963		963		963	
	4.19	Overall length, without and with powered pile slope l ₁ (mm)	6,224	6,296	6,224	6,296	6,724	6,796	6,724	6,796
	4.21	Overall width ↔ b ₂ (mm)	4,120	4,345	4,120	4,345	4,120	4,345	4,120	4,345
	4.21.3	Overall width across spreader 20' b _{1,20} (mm)	6,053		6,053		6,053		6,053	
	4.21.4	Overall width across spreader 40' b _{1,40} (mm)	12,185		12,185		12,185		12,185	
	4.30	Reach, lateral from vehicle centreline b ₈ (mm)	600		600		600		600	
	4.31	Ground clearance, laden, below mast m ₁ (mm)	300		300		300		300	
	4.32	Ground clearance, centre of wheelbase m ₂ (mm)	370		370		370		370	
4.34.3	Aisle width with 20' container crossways Ast ₂₀ (mm)	10,223		10,223		10,775		10,775		
4.34.4	Aisle width with 40' container crossways Ast ₄₀ (mm)	14,992		14,992		14,992		14,992		
4.35	Turning radius W ₉ (mm)	5,440		5,440		6,060		6,060		
4.35.2	Turning radius with 40' container crossways Wa ₄₀ (mm)	8,293		8,293		8,510		8,510		
4.36	Internal turning radius b ₁₃ (mm)	2,105		2,105		2,334		2,334		
PERFORMANCE DATA	5.1	Travel speed, laden/unladen Stage IIIA km/h	27	30	26	28	27	30	26	28
	5.1	Travel speed, laden/unladen Stage IIIB	-	-	26	28	27	30	26	28
	5.2	Lifting speed, laden/unladen Stage IIIA m/sec	0.53	0.56	0.53	0.56	0.53	0.56	0.53	0.56
	5.2	Lifting speed, laden/unladen Stage IIIB	-	-	0.53	0.55	0.53	0.56	0.53	0.55
	5.3	Lowering speed, laden/unladen Stage IIIA m/sec	0.49	0.47	0.49	0.47	0.49	0.47	0.49	0.47
	5.3	Lowering speed, laden/unladen Stage IIIB	-	-	0.49	0.47	0.49	0.47	0.49	0.47
	5.4.1	Telescoping 20'-40' m/sec	0.34	0.25	0.34	0.25	0.34	0.25	0.34	0.25
	5.5	Drawbar pull, laden Stage IIIA kN	93		135.0		135.0		135.0	
	5.5	Drawbar pull, laden Stage IIIB	-		130.0		135.0		135.0	
	5.7	Gradeability, laden/unladen Stage IIIA † %	23	33	23	33	23	33	23	33
	5.7	Gradeability, laden/unladen Stage IIIB †	-	-	34	27	27	27	27	27
5.9	Acceleration time, laden/unladen Stage IIIA s	6.94	6.78	6.94	6.78	6.94	6.78	6.94	6.78	
5.9	Acceleration time, laden/unladen Stage IIIB	-	-	7.56	7.14	7.56	7.14	7.56	7.14	
5.10	Service brake	oil-immersed / wet disc		oil-immersed / wet disc		oil-immersed / wet disc		oil-immersed / wet disc		
SPREADER	9.1	Manufacturer/type	ELME 588TB		ELME 588TB		ELME 588TB		ELME 588TB	
	9.2	Design	side lift spreader		side lift spreader		side lift spreader		side lift spreader	
	9.3	Size of containers feet (')	ISO 20' - 40'		ISO 20' - 40'		ISO 20' - 40'		ISO 20' - 40'	
	9.4	Side shift	+/- 600		+/- 600		+/- 600		+/- 600	
	9.5	Tilt, 20' / 40' ⇄	mechanically		mechanically		mechanically		mechanically	
	9.5.1	Tilt, horizontal (pile slope) 20' / 40' °	1° / 2°		1° / 2°		1° / 2°		1° / 2°	
	9.6	Rotation angle °	0		0		0		0	
9.7	Longitudinal adjustment	6.053 - 12.185		6.053 - 12.185		6.053 - 12.185		6.053 - 12.185		
ADDITIONAL DATA	10.1	Operating pressure for attachments bar	193		193		193		193	
	10.2	Oil volume for attachments l/min	105		105		105		105	
	10.3	Hydraulic oil tank, capacity l	400		400		400		400	
	10.4	Fuel tank, capacity l	367		367		367		367	
	10.5	Steering design	hydrostatic		hydrostatic		hydrostatic		hydrostatic	
	10.6	Number of steering rotation	3.7		3.7		3.7		3.7	
	10.7	Sound pressure level at the driver's seat dB(A)	73		73		73		73	
	10.7	Sound pressure level at the driver's seat (Stage IIIB) dB(A)	70		70		70		70	
	10.7.1	Sound power level during the working cycle dB(A)	109		109		109		109	
	10.8	Towing coupling, type DIN	no		no		no		no	

HYSTER		HYSTER		HYSTER		1.1
H22XM-12EC		H22XM-12EC		H22XM-12EC - CTWT		1.2
Diesel		Diesel		Diesel		1.3
Seat		Seat		Seat		1.4
9 000		9 000		9 000		1.5
1 220		1 220		1 220		1.6
1321		1321		1321		1.8
4 500		4 500		4 500		1.9
5+1 high	6+1 high	6+1 high	7+1 high	6+1 high	7+1 high	1.10
36,010		36,760		35,520		2.1
36,457	8,553	37,297	8,463	36,360	10,160	2.2
22,377	13,633	23,217	13,543	22,280	15,240	2.3
L/SE		L/SE		L/SE		3.1
14,00 x 24		14,00 x 24		14,00 x 24		3.2
14,00 x 24		14,00 x 24		14 00 x 24		3.3
4X	2	4X	2	4X	2	3.5
3 286		3 286		3 286		3.6
2 356		2 356		2 356		3.7
4	3	4	3	4	3	4.1
9,458		10,758		10 758		4.2
0		0		0		4.3
13,850		16,450		16,450		4.4
16,436		19,063		19,036		4.5
3,806		3,806		3,806		4.7
2,627		2,627		2,627		4.8
N/A		N/A		N/A		4.12
2,263		2,263		2,263		4.15
963		963		963		4.17
6,784	6,856	6,784	6,856	6,784	6,856	4.19
4,120	4,345	4,120	4,345	4,345		4.21
6,566		6,566		6,566		4.21.3
12,699		12,699		12,699		4.21.4
600		600		600		4.30
300		300		300		4.31
370		370		370		4.32
10,775		10,775		10,775		4.34.3
15,110		15,110		15,110		4.34.4
6,060		6,060		6,060		4.35
8,510		8,510		8,510		4.35.2
2,334		2,334		2,334		4.36
26	28	26	28	26	28	5.1
26	28	26	28	26	28	5.1
0.53	0.56	0.53	0.56	0.53	0.56	5.2
0.53	0.55	0.53	0.55	0.53	0.55	5.2
0.49	0.47	0.49	0.47	0.49	0.47	5.3
0.49	0.47	0.49	0.47	0.49	0.47	5.5
0.34	0.25	0.34	0.25	0.34	0.25	5.4.1
135.0		135.0		135.0		5.5
135.0		135.0		135.0		5.5
23	33	23	33	23	33	5.7
27	27	27	27	27	27	5.7
6.94	6.78	6.94	6.78	6.94	6.78	5.9
7.56	7.14	7.56	7.14	7.56	7.14	5.9
oil-immersed / wet disc		oil-immersed / wet disc		oil-immersed / wet disc		5.10
ELME 584LA-LF		ELME 584LA-LF		ELME 584LA-LF		9.1
side lift spreader		side lift spreader		side lift spreader		9.2
ISO 20' - 40'		ISO 20' - 40'		ISO 20' - 40'		9.3
+/- 600		+/- 600		+/- 600		9.4
mechanically		mechanically		mechanically		9.5
1° / 2°		1° / 2°		1° / 2°		9.5.1
0		0		0		9.6
6.566 - 12.699		6.566 - 12.699		6.566 - 12.699		9.7
193		193		193		10.1
105		105		105		10.2
400		400		400		10.3
367		367		367		10.4
hydrostatic		hydrostatic		hydrostatic		10.5
3.7		3.7		3.7		10.6
73		73		73		10.7
70		70		70		10.7
109		109		109		10.7.1
no		no		no		10.8

NOTES:

All specifications and capacities are valid for trucks equipped with a Hyster empty container handling spreader for handling ISO containers.

† Gradeability figures (lines 5.7) 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.

▲ Powered pile slope add 72 mm

↑ Mast lift

⊙ +/- 3% tolerance depend on tyre inflated pressure / or tyre brand

● Full suspension seat in depressed position

↔ Optional wider axle

Pile slope - hydraulically 6°/6°

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.

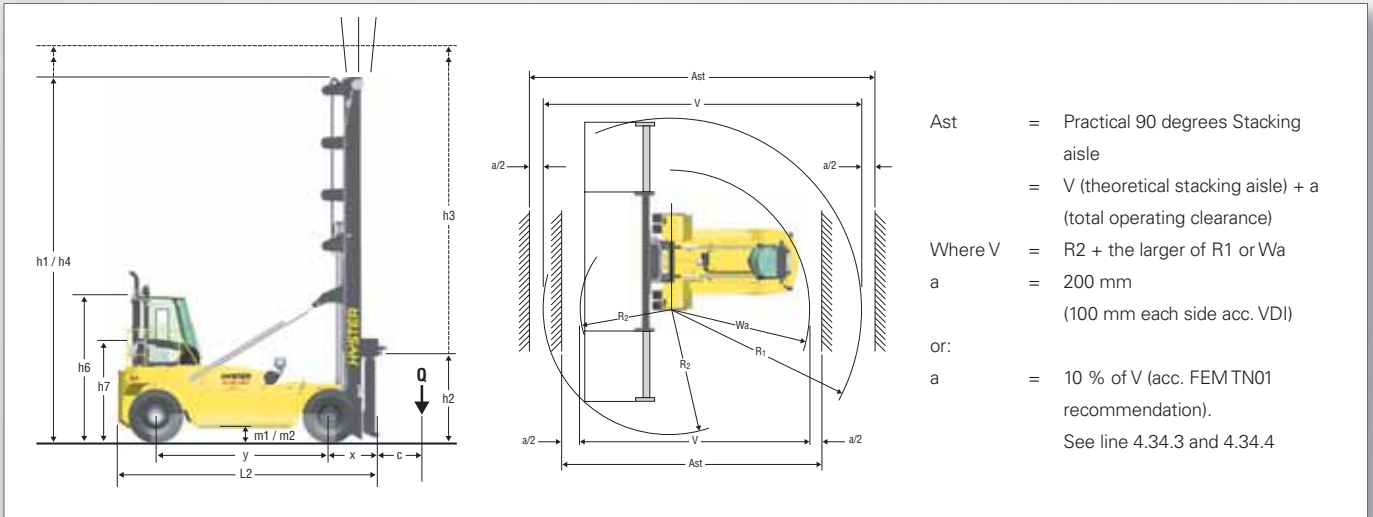
Operators must be trained and adhere to the instructions contained in the Operating Manual.

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

 **Safety:**

This truck conforms to the current EU requirements.

TRUCK DIMENSIONS



MAST AND CAPACITY INFORMATION

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

H16XM12EC

Stacking height	Lift height	Lowered height (mm)	Lowered height	Extended height	Side shift	Truck width	Capacity
8' - 9'6"	$h_3 + s$ (mm)	s (mm)	h_1 (mm)	h_4 (mm)	b_8 (mm)	b_2 (mm)	kg
6 / 5 high single	16,200	2,350	9,353	16,287	600	4.120 / 4.345	7,000

H18XM12EC

Stacking height	Lift height	Lowered height (mm)	Lowered height	Extended height	Side shift	Truck width	Capacity
8' - 9'6"	$h_3 + s$ (mm)	s (mm)	h_1 (mm)	h_4 (mm)	b_8 (mm)	b_2 (mm)	kg
7 / 6 high single	18,800	2,350	10,723	18,957	600	4.120 / 4.345	7,000
7 / 6 high single	18,800	2,350	10,723	18,957	600	4.120 / 4.345	8,500

H22XM12EC

Stacking height	Lift height	Lowered height (mm)	Lowered height	Extended height	Side shift	Truck width	Capacity
8' - 9'6"	$h_3 + s$ (mm)	s (mm)	h_1 (mm)	h_4 (mm)	b_8 (mm)	b_2 (mm)	kg
6 / 5 high	16,200	2,350	9,423	16,357	600	4.120 / 4.345	9,000
7 / 6 high	18,800	2,350	10,723	18,957	600	4.120 / 4.345	9,000

Lift height to handle 8'6" - 9'6" high Containers

POWERTRAINS

ENGINE	1.3	Drive: electric, diesel, petrol, LPG	Diesel		
	7.1	Engine manufacturer/type	Cummins QSB 6.7 Stage IIIA	Cummins QSB 6.7 Stage IIIA	Cummins QSB 6.7L Stage IIIB
	7.2	Engine power according ISO1585 (nominal) kW @rpm	142 @2.200	164@2.000	164@2.000
	7.2.1	Engine power according ISO1585 (maximum) kW @rpm	145 @1.800	172@1.800	172@1.800
	7.3	Rated speed min -1	2,200	2,000	2,000
	7.3.1	Maximum engine torque	931 @1.400	949@1.400	949@1.400
	7.4	Number of cylinders/displacement cm ³	6 / 6.700	6 / 6.700	6 / 6.700
	7.5	Fuel consumption according VDI cycle l/h	☎	☎	☎
DRIVETRAIN	8.1	Type of drive control	hydrodynamic 3 speed	hydrodynamic 3 speed	hydrodynamic 3 speed
	8.2	Transmission Manufacturer / Type	S.O.H. TE13	S.O.H. TE17	S.O.H. TE17
	8.6	Drive axle Manufacturer / Type	Axle Tech PRC 1756	Axle Tech PRC 1756	Axle Tech PRC 1756
	8.11	Service brake	oil-immersed / wet disc	oil-immersed / wet disc	oil-immersed / wet disc
	8.12	Parking brake	dry disc on drive axle	dry disc on drive axle	dry disc on drive axle

☎ Data available on request, as values are dependent on application

MODELS, STACKING HEIGHTS AND CAPACITIES

The Hyster Empty Container Handlers range H16-22XM-12EC consists of following models:

- **H16XM-12EC** Empty Container Handler, maximum 7000 kg, stacking 6 x 8'6" high or 5 x 9'6" high single containers.
- **H18XM-12EC** Empty Container Handler, maximum 7000 or 8500 kg, stacking 7 x 8'6" high or 6 x 9'6" high single containers.
- **H22XM-12EC** Empty Container Handler, maximum 9000 kg, stacking '2 on 5' x 8'6" high or '2 on 4' x 9'6" high double containers, and also: 6 x 8'6" high or 5 x 9'6" high single containers.
- **H22XM-12EC** Empty Container Handler, maximum 9000 kg, stacking '2 on 6' x 8'6" high or '2 on 5' x 9'6" high double containers, and also: 7 x 8'6" high or 6 x 9'6" high single containers.

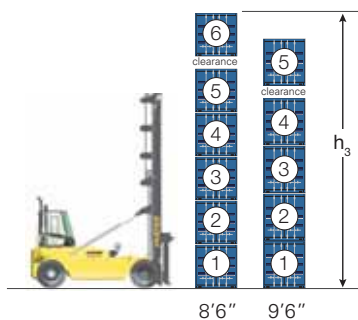
All capacities are according to ISO 10525.

Warning: 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 be kept in back-tilted position or maximum in vertical position when mast / loads are elevated. Operators must be trained and adhere to the instructions contained in the Operating Manual.

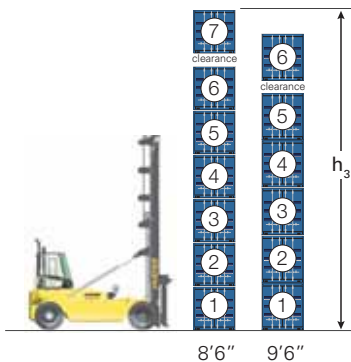


LIFT HEIGHT TO HANDLE 8'6" - 9'6" HIGH CONTAINERS

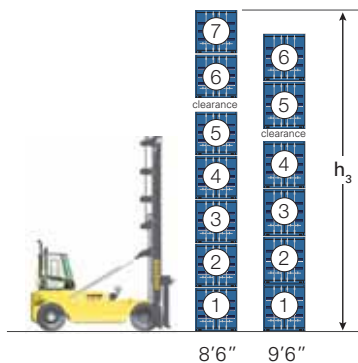
H16XM12EC - 7.000 kg @ 1 220 mm



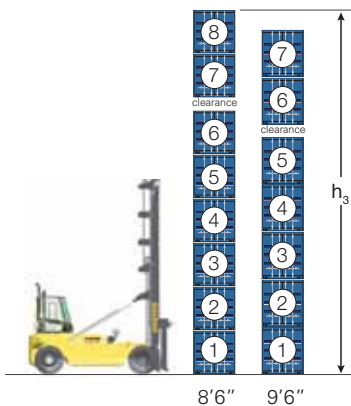
H18XM12EC - 8.500 kg @ 1 220 mm



H22XM12EC - 9.000 kg @ 1 220 mm



H22XM12EC - 9.000 kg @ 1 220 mm



$b_{1,20}$ load width 20' or 6096 mm

$b_{1,40}$ load width 40' or 12192 mm

l_6 load length 8' or 2438,4 mm

W_a outer turning radius of the truck

a 10% of $b_{1,20}$ or $b_{1,40}$

$$Ast\ 20 = Wa + \sqrt{\left(X + C + \frac{l_6}{2}\right)^2 + \left(\frac{b_1}{2} - b_{13}\right)^2} + a$$

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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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