

**1-3.5t**

**H3 Series Internal Combustion  
Counterbalanced Forklift Truck (Euro Stage V)**

**STAGE V**



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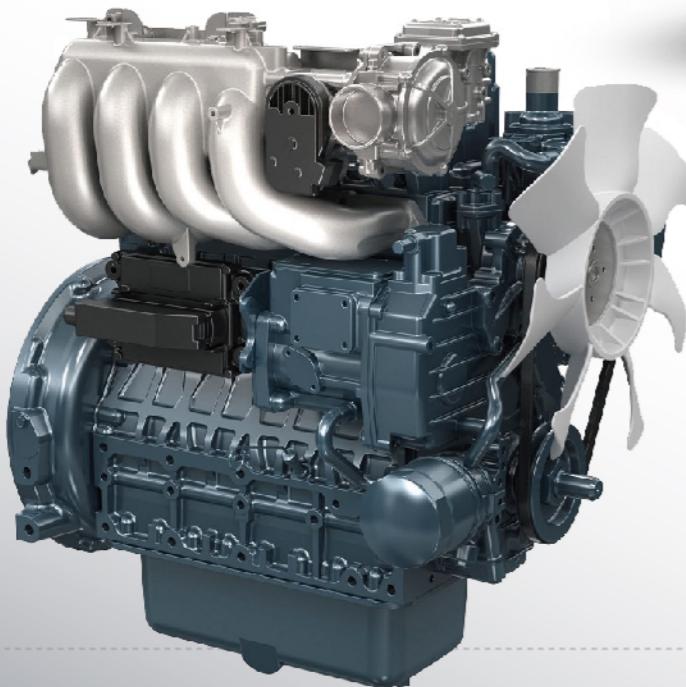
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# HIGH QUALITY PRODUCT

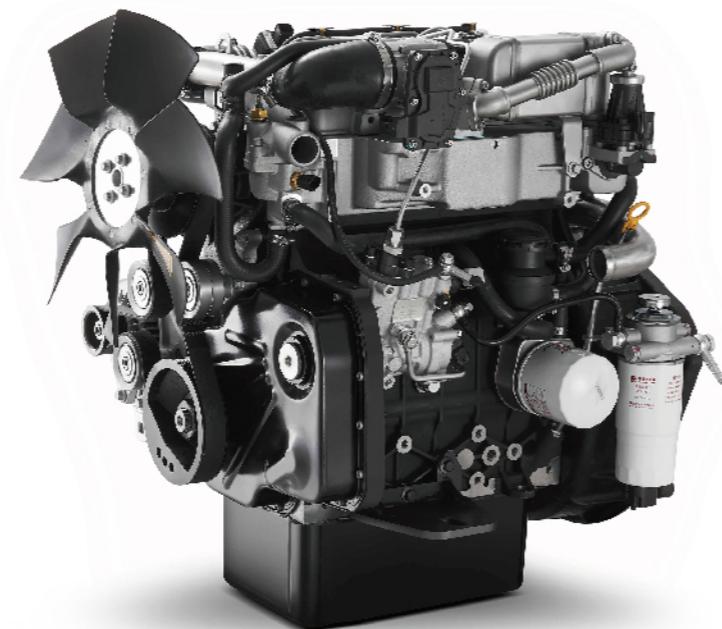
H3 series is proudly launched adhering to the principle of repaying the society with high quality product and vision of being century-old enterprise. To HELI, the H3 series is the culmination and milestone in pursuit of mastery in the development and manufacture of forklift over the years.

Elaborately built H3 series will provide you high level driving experience with environment friendliness, outstanding comfort, safety and reliability, easy maintenance and excellent working efficiency.



## Engine Model:

XINCHAI 3E22YG51(Diesel)



## Engine Model:

KUBOTA V2403(Diesel)  
KUBOTA V2607(Diesel)  
KUBOTA WG2503(GAS/LPG)  
GCT GK25(GAS/LPG)



**The whole machine adopts the engine conforming to the EU StageV and the American environmental protection standard;**

- The diesel engine adopts KUBOTA V2403/V2607 EU StageV and XINCHAI 3E22YG51 EU StageV electronic high pressure common rail engine and DOC + DPF tail gas treatment technology.
- Single/Dual fuel using KUBOTA WG2503 and GCT GK25 electronic high pressure common rail engine, using three catalytic tail gas treatment technology.

Note: DOC — Diesel Oxidation Catalyst. DPF — Diesel Particulate Filters



## Safety and reliability

HELI keeps improving truck safety and reliability to ensure the safety of people, machine and goods.



■ ratchet parking brake ■ automobile type oil adding cap structure ■ double-lip elastic sealing gasket

## Enhanced Operator Presence System with comprehensive security upgrade

### Walking on site induction safety system

When the machine is running, the operator will suddenly leave the correct operating position without releasing the accelerator pedal, and the power will be cut off to protect the safety of running.

### LHS (Load Handling System) on site induction safety system and reset control system

When the operator leaves or returns to the correct operating position without loosening the LHS control device, the operation brought by the LHS operation will be suspended and will not occur automatically, so as to protect the LHS operation safety.

### LHS (Load Handling System) static control system

When the LHS control device is operated and the engine is started, the operation brought by LHS control will not happen automatically after the engine is started. Only when the LHS control device is reset and then operated can the operation continue.

### Non-parking security alarm system

When the forklift is not powered off and the driver is not using the parking brake, an audible warning is used to alert the driver.

## Improved cooling performance

- The hot air reflow isolating device, aluminum plate-fin type radiator, 60mm backward muffler and optimized thermal dissipation duct improve cooling ability and ensure engine work reliability to meet the requirements of working under harsh and high temperature environment better.
- The hydraulic system adopts high efficiency and low loss technology, comprehensively optimizes the hydraulic piping system and sealing form, and further reduces the pressure loss, hydraulic oil temperature and sealing reliability in the hydraulic system.

## Driver restraint warning system

- The vehicle is equipped with driver's safety belt restraint warning system, which makes driving safer.

## Key parts

- The optimal design of key parts like frame, mast and overhead guard improve the whole truck's safety and reliability.

## Fully-closed panel-mounted cab

- Fully-closed panel-mounted cab with high strength ensures the safety of people and machine fully.

## Casting axle

- The key rotation parts are protected from water and dust to extend their maintenance period. With the using of casting axle, the bearing load carrying ability is improved and the truck structure is simple and reliable. The service life is prolonged.



## Easy maintenance

Easy maintenance which is good for maintaining the optimal condition of key parts and completed truck and ensures safety and work efficiency is the necessary character of a good product.

### Large engine hood opening angle

- Engine hood lock integrated on the hood is convenient for opening and close during maintenance.
- The gas spring has optimized arrangement, improved load carrying ability, opening angle, prolonged gas spring service life and improved opening comfort. 80° engine hood opening angle offers wide operation space for check and maintenance.



■ compositional radiator heat flow baffle



■ brake liquid reservoir



■ mast pipeline



### Low after-sales maintenance cost

- Equipped with Euro V diesel, liquefied gas, dual fuel power configuration to meet the needs of different users.
- Based on the same platform of a variety of fuel (diesel / liquefied gas) configuration scheme, the main parts of the general, low after-sales maintenance cost is low.

## Excellent working efficiency

With high efficiency, the truck perfectly guarantees the material handling work at port, dock, and railway station. It can meet the requirements for various kinds of complicated work conditions.

### Quick responding steering wheel

- With 100% pivot steering and returning, the truck has good maneuverability in narrow space.
- The truck has small turning radius, easy steering, good gradeability and flexible maneuverability.



### Needs of low-temperature areas

- The prototype was tested at -25°C in the cold storage laboratory to meet the demand for use at this temperature.

### Diesel products with large capacity batteries

- Euro V diesel-powered models use large capacity batteries, vehicle start, electricity is more secure.

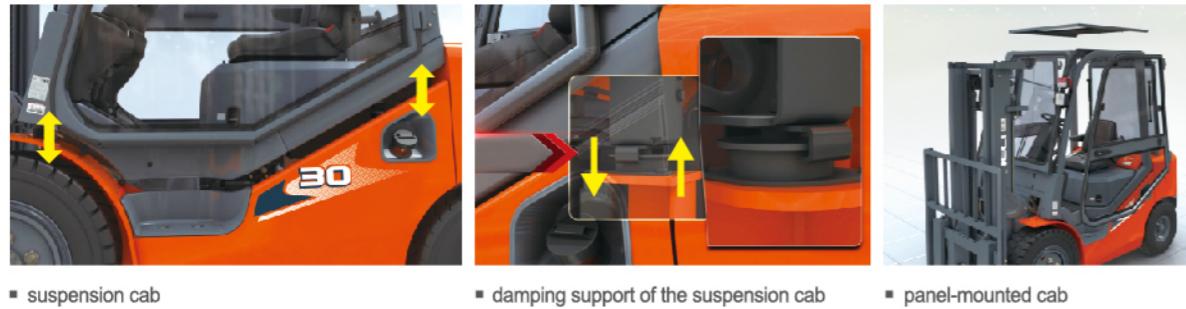


## Environment-friendliness

Clean and environment-friendly power meeting international emission standard is assembled on the H3 series to reduce harmful emissions and be environment-friendly. Meanwhile, H3 series effectively reduce truck vibration and noise.

### Suspension cab

- Cushion connection between the frame and cab and wholly suspension cab absorb whole truck's vibration effectively. Fully-closed panel-mounted cab isolates the noise.



### Mast lowering buffering device

- It reduces shock and vibration to the mast and avoids crash noise caused by goods falling to the ground.



## Outstanding comfort

Ergonomic designs, optimized operating device structure and layout improve driving experience and ensure long hours of efficient operation.

### Enlarged operating space

- Tilting cylinder located below the floor board, 30mm widened low anti-skidded step and 45% enlarged operation space at foot provide comfort entry, exit and operation.
- 80mm heightened overhead guard and large arc shape of the overhead guard's front leg enlarge operating space and reduce operating fatigue.



### Outstanding visibility

- With three-stage free lift mast, front view width is increased by 30mm; with 15mm lowered instrument panel, the visibility of fork and goods is increased by 20mm. CAE optimized counter weight structure improve rear view.



### LED combined instrument

- With the clear displaying and right installment of the instrument, the operator can know the truck information in time.

### Rear assist handle (optional)

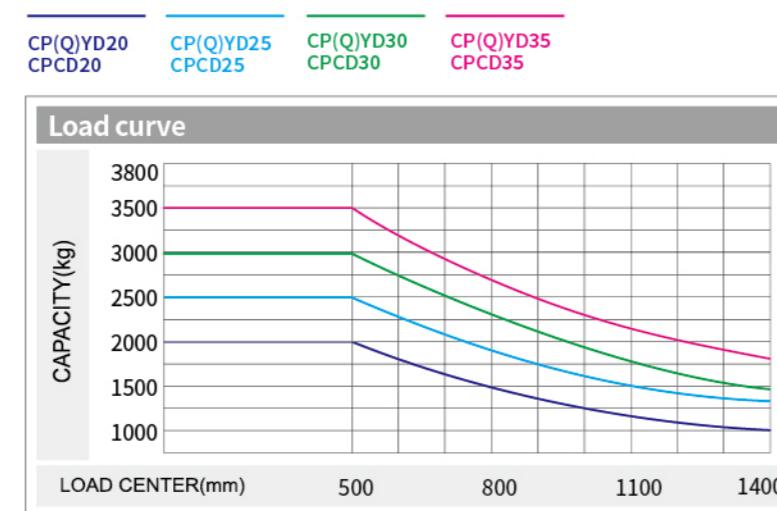
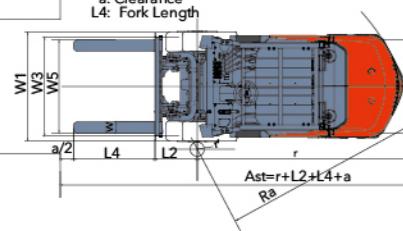
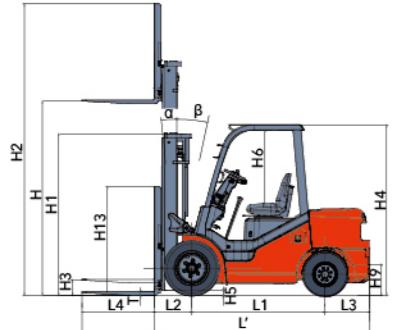
- The assist grip with a horn enhances comfort by offering easy horn operation while travelling in reverse.

Manufacturer and technical parameters											
Character											
1.01	Manufacturer			HELI							
1.02	Model			CPCD10/CP(Q)YD10	CPCD15/CP(Q)YD15	CPCD18/CP(Q)YD18					
1.03	Rated capacity		kg	1000	1500	1750					
1.04	Load center		mm	500							
1.05	Operation mode			Seat-type							
Size											
2.01	Max. lifting height		H	mm	3000						
2.02	Mast overall height(Fork to the ground and mast be vertical)		H1	mm	1995	1995	1995				
2.03	Max. fork lifting height(With backrest)		H2	mm	4014						
2.04	Free lift height		H3	mm	152	155	155				
2.05	Overall height(Overhead guard)		H4	mm	2140						
2.06	Min. ground clearance(At the mast)		H5	mm	110						
2.07	Distance from the surface of the seat to the overhead guard		H6	mm	1018						
2.08	Overall length(With fork/Without fork)		(L/L')	mm	3197/2277	3201/2281	3219/2299				
2.09	Wheel base		L1	mm	1450						
2.10	Overall width		W1	mm	1070						
2.11	Tread (Front tread/Rear tread)		(W3/W2)	mm	902/928	902/928	932/928				
2.12	Fork adjustable range(The external of the fork)(Max./Min.)		W5	mm	950/200						
2.13	Min. turning radius(Exterior)		r	mm	1875	1910	1930				
2.14	Min. right angle aisle width		Ra	mm	2011	2016	2035				
2.15	Min. right angle stacking aisle width		Ast	mm	3576	3584	3603				
2.16	Mast tilting angle		$\alpha / \beta$	deg	6/10						
2.17	Fork size		L4×W×T	mm	770×100×32	920×100×35	920×100×35				
Weight											
3.01	Total weight			kg	2540	2720	2850				
Wheel and tyre											
4.01	Tyre type(Front/Rear)				Pneumatic tyre						
4.02	Tyre size(Front/Rear)				6.50-10-10PR/5.00-8-10PR	6.50-10-10PR/5.00-8-10PR	6.50-10-10PR/5.00-8-10PR				
Performance											
Model		CP(Q)YD10	CP(Q)YD15	CP(Q)YD18	CPCD10	CPCD15	CPCD18	CPCD10			
Configuration number		KU1H	KU1H	KU1H	KU18H	KU18H	XC26H	XC26H	XC26H		
Max. drawbar pull (Loaded/Unloaded)	kn	17/7	19/7	19/7	17/7	18/7	18/7	22/8	22/8		
* Max. gradeability (Loaded/Unloaded)	%	40/24	40/20	40/18	40/24	40/20	40/18	48/30	45/25		
Max. traveling speed (Loaded/Unloaded)	km/h	17/18					17/17				
Lifting speed (Loaded/Unloaded)	mm/s	610/650		550/605		565/585					
Lowering speed (Loaded/Unloaded)	mm/s	450/600									
Drive and transmission control device											
Engine model		KUBOTA WG2503		KUBOTA V2403-CE-E5B		XINCHAI 3E22YG51(Three-cylinder)					
Engine rated power	kW/rpm	GAS: 42.8/2600, LPG: 43.5/2600		33.6/2400		44.8/2400					
Engine rated torque	Nm/rpm	GAS: 163/1800, LPG: 173 7/1400		157.4/1500		210/1600-1800					
Engine cylinder number-borexstroke		4-88×102.4		4-87×102.4		3-94×107					
Engine displacement	L	2.491		2.434		2.23					
Engine type		GAS/LPG		Diesel		Diesel					
Emission		EU StageV / EPA/CARB Tier3		EU StageV / EPA/CARB Tier4		EU StageV					
Battery(Voltage/Capacity)	V/Ah	12/60		12/95		12/80					

Note: \*indicates the theoretical calculation value.

1t/1.5t/1.8t H3 series internal combustion forklift mast configuration table																		
Mast type	Mast model	Max. lifting height (mm)	Load capacity (load center 500mm) (kg)			Free lift height (mm)				Height (mm)				Mast tilt angle $\alpha/\beta$ (°)	Service weight (kg)			
			Without Backrest		With Backrest	Without Backrest		With Backrest	Without backrest/with backrest		Without Backrest	With Backrest	With Backrest					
			1t	1.5t	1.8t	1t	1.5-1.8t	1t	1.5-1.8t	1t	1.5-1.8t	1t	1.5-1.8t					
M200	2000	1000	1500	1800	152	155	152	155	1495	1495	2644	2644	3039	3039	6-10	2470	2650	2780
M250	2500	1000	1500	1800	152	155	152	155	1745	1745	3144	3144	3539	3539	6-10	2510	2680	2810
M300	3000	1000	1500	1800	152	155	152	155	1995	1995	3644	3644	4039	4039	6-10	2540	2720	2850
M330	3300	1000	1500	1800	152	155	152	155	2145	2145	3944	3944	4339	4339	6-10	2560	2740	2870
M350	3500	1000	1500	1800	152	155	152	155	2245	2245	4144	4144	4539	4539	6-10	2580	2750	2880
M370	3700	1000	1500	1800	152	155	152	155	2345	2345	4344	4344	4739	4739	6-10	2590	2770	2900
M400	4000	1000	1500	1800	152	155	152	155	2545	2545	4644	4644	5039	5039	6-10	2650	2830	2960
M425	4250	950	1400 *1500	1650 *1750	152	155	152	155	2670	2670	4894	4894	5289	5289	6-6 *6-12	2660	2840	2970

Manufacturer and technical parameters						
Character						
1.01	Manufacturer			HELI		
1.02	Model		CPCD20 / CP(Q)YD20	CPCD25 / CP(Q)YD25	CPCD30 / CP(Q)YD30	CPCD35 / CP(Q)YD35
1.03	Rated capacity	kg	2000	2500	3000	3500
1.04	Load center	mm			500	
1.05	Operation mode			Seat-type		
Size						
2.01	Max. lifting height	H	mm	3000	3000	3000
2.02	Mast overall height (Fork to the ground and mast be vertical)	H1	mm	2000	2000	2065
2.03	Max. fork lifting height (With backrest)	H2	mm	4030	4030	4245
2.04	Free lift height	H3	mm	165	165	160
2.05	Overall height (Overhead guard)	H4	mm	2150	2150	2170
2.06	Min. ground clearance (At the mast)	H5	mm	115	115	135
2.07	Distance from the surface of the seat to the overhead guard	H6	mm	1030	1030	1030
2.08	Overall length (With fork / Without fork)	(L/L')	mm	3500/2580	3708/2638	3818/2748
2.09	Wheel base	L1	mm	1650	1650	1700
2.10	Overall width	W1	mm	1150	1150	1225
2.11	Tread (Front tread / Rear tread)	(W3/W2)	mm	970/970	970/970	1000/970
2.12	Fork adjustable range (The external of the fork) (Max. / Min.)	W5	mm	1030/244	1030/244	1060/250
2.13	Min. turning radius (Exterior)	r	mm	2170	2240	2400
2.14	Min. right angle stacking aisle width	Ra	mm	2200	2280	2380
2.15	Mast tilting angle	$\alpha / \beta$	deg	6/12	6/12	6/12
2.16	Fork size	L4×W×T	mm	920×122×40	1070×122×40	1070×125×45
Weight						
3.01	Total weight	kg	3370	3740	4340	4700
Wheel and tyre						
4.01	Tyre type (Front/Rear)			Pneumatic tyre		
4.02	Tyre size (Front/Rear)		7.00-12-12PR/ 6.00-9-10PR	7.00-12-12PR/ 6.00-9-10PR	28×9-15-14PR/ 6.50-10-10PR	28×9-15-14PR/ 6.50-10-10PR



Performance						
Model		CP(Q)YD20	CP(Q)YD25	CPCD20	CPCD25	CPCD20
Configuration number		KU1H	KU1H	KU20H	KU20H	XC26H
Max.drawbar pull (Loaded/Un loaded)	kN	24/13	24/14	20/13	20/13	25/11
* Max.Gradeability (Loaded/Unloaded)	%	30/26	29/22	32/25	29/23	39/28
Max.traveling speed (Loaded/Unloaded)	km/h	17/18	17/18	17/17	17/17	17/18
Lifting Speed (Loaded/Unloaded)	mm/s	535/600	535/600	570/585	570/585	530/540
Lowing Speed (Loaded/Unloaded)	mm/s	450/500	450/500	450/500	450/500	450/500
Drive and transmission control device						
Engine mode		KUBOTA WG2503		KUBOTA V2403-CR-TE5B		XINCHAI 3E22YG51
Engine rated power	kW/rpm	GAS:42.8/2600, LPG:43.5/2600		42.6/2400		44.8/2400
Engine rated torque	Nm/rpm	GAS:163/1800, LPG:173.7/1400		195.6/1500		210/1600-1800
Cylinder number-Bore×stroke		4-88×102.4		4-87×102.4		3-94×107
Engine displacement	L	2.491		2.434		2.23
Engine type		GAS/LPG		Diesel		Diesel
Emission		EU StageV / EPA/CARB Tier3		EU StageV / EPA/CARB Tier4		EU StageV
Battery(Voltage/Capacity)	V/Ah	12/60		12/95		12/80

Performance						
Model		CP(Q)YD30	CP(Q)YD35	CP(Q)YD20	CP(Q)YD25	CP(Q)YD30
Configuration number		KU1H	KU1H	RC5H	RC5H	RC5H
Max.drawbar pull (Loaded/Un loaded)	kN	23/15	22/16	24/13	24/14	23/15
* Max.Gradeability (Loaded/Unloaded)	%	28/22	18/21	30/21	29/22	28/22
Max.traveling speed (Loaded/Unloaded)	km/h	18/19	18/19	17/18	17/18	18/19
Lifting Speed (Loaded/Unloaded)	mm/s	455/540	360/400	535/600	535/600	455/540
Lowing Speed (Loaded/Unloaded)	mm/s	450/500	350/400	450/500	450/500	450/500
Drive and transmission control device						
Engine mode		KUBOTA WG2503		GCT GK25		GCT GK25
Engine rated power	kW/rpm	GAS:42.8/2600, LPG:43.5/2600		GAS: 44/2600 LPG: 47/2600		GAS: 44/2600 LPG: 47/2600
Engine rated torque	Nm/rpm	GAS:163/1800, LPG:173.7/1400		GAS: 168/1600 LPG: 190/1600		GAS: 168/1600 LPG: 190/1600
Cylinder number-Bore×stroke		4-88×102.4		4-89×100		4-89×100
Engine displacement	L	2.491		2.488		2.488
Engine type		GAS/LPG		Gas/LPG		Gas/LPG
Emission		EU StageV / EPA/CARB Tier3		EU StageV / EPA/CARB Tier3		EU StageV / EPA/CARB Tier3
Battery(Voltage/Capacity)	V/Ah	12/60		12/60		12/60

Performance						
Model		CPCD30	CPCD35	CPCD30	CPCD35	CPCD20
Configuration number		KU20H	KU20H	XC26H	XC26H	KU21H
Max.drawbar pull (Loaded/Un loaded)	kN	20/14	21/15	24/15	23/15	20/11.3
* Max.Gradeability (Loaded/Unloaded)	%	27/21	27/22	34/24	30/23	30/24
Max.traveling speed (Loaded/Unloaded)	km/h	18/19	18/19	18/18	18/18	17/18
Lifting Speed (Loaded/Unloaded)	mm/s	480/500	430/460	470/480	440/455	565/585
Lowing Speed (Loaded/Unloaded)	mm/s	450/550	450/550	450/550	450/550	450/500
Drive and transmission control device						
Engine mode		KUBOTA V2403-CR-TE5B		XINCHAI 3E22YG51		KUBOTA V2607-CR-E5B
Engine rated power	kW/rpm	42.6/2400		44.8/2400		38/2400
Engine rated torque	Nm/rpm	195.6/1500		210/1600-1800		174.1/1500

2t/2.5t H3 series internal combustion forklift mast configuration table

Mast type	Mast model	Max. lifting height (mm)	Load capacity (load center 500mm)(kg)		Free lift height (mm)				Height(mm)				Mast tilt angle α/β (°)	Service weight (kg)			
									Height (mast lowered)		Height (mast Lifted)						
			Without Backrest	Without Backrest	With Backrest	With Backrest	Without backrest/with backrest	Without Backrest	Without Backrest	With Backrest	Without backrest/with backrest	Without Backrest	With Backrest				
2t	2.5t	2t	2.5t	2t	2.5t	2t	2.5t	2t	2.5t	2t	2t	2.5t	2t	2.5t	3t	3.5t	
Standard Mast	M200	2000	2000	2500	150	150	150	150	1500	1500	2683	2683	3039	3039	6-10	3280	3650
	M250	2500	2000	2500	150	150	150	150	1750	1750	3183	3183	3539	3539	6-10	3330	3700
	M300	3000	2000	2500	150	150	150	150	2000	2000	3683	3683	4039	4039	6-10	3370	3740
	M330	3300	2000	2500	150	150	150	150	2150	2150	3983	3983	4339	4339	6-10	3400	3770
	M350	3500	2000	2500	150	150	150	150	2250	2250	4183	4183	4539	4539	6-10	3420	3790
	M370	3700	2000	2500	150	150	150	150	2350	2350	4383	4383	4739	4739	6-10	3430	3800
	M400	4000	2000	2500	150	150	150	150	2550	2550	4683	4683	5039	5039	6-10	3510	3880
	M425	4250	2000	2250 *2500	150	150	150	150	2675	2675	4933	4933	5289	5289	*6-6 6-6 6-6 6-6	3530	3900
	M450	4500	1950 *1950	2050 *2450	150	150	150	150	2800	2800	5183	5183	5539	5539	*6-10	3560	3930
	M500	5000	1700 *1850	1800 *2300	150	150	150	150	3050	3050	5683	5683	6039	6039	*6-10	3600	3970
	M550	5500	1300 *1750	1350 *2100	150	150	150	150	3350	3350	6183	6183	6539	6539	*6-6	3700	4070
	M600	6000	900 *1700	950 *1800	150	150	150	150	3600	3600	6683	6683	7039	7039	*6-6	3740	4110
Wide View Full Free 2-Stage Mast	ZM200	2000	2000	2500	876	876	500	500	1500	1500	2663	2663	3039	3039	6-10	3300	3670
	ZM250	2500	2000	2500	1126	1126	750	750	1750	1750	3163	3163	3539	3539	6-10	3360	3730
	ZM300	3000	2000	2500	1376	1376	1000	1000	2000	2000	3663	3663	4039	4039	6-10	3430	3800
	ZM330	3300	2000	2500	1526	1526	1150	1150	2150	2150	3967	3967	4343	4343	6-10	3470	3840
	ZM350	3500	2000	2500	1626	1626	1250	1250	2250	2250	4163	4163	4539	4539	6-10	3500	3870
	ZM370	3700	2000	2500	1726	1726	1350	1350	2350	2350	4363	4363	4739	4739	6-10	3520	3890
	ZM400	4000	2000	2500	1926	1926	1550	1550	2550	2550	4663	4663	5039	5039	*6-10	3610	3980
	ZM425	4250	2000	2250 *2500	2051	2051	1675	1675	2675	2675	4914	4914	5290	5290	*6-10	3650	4020
	ZM450	4500	1950 *1950	2050 *2450	2176	2176	1800	1800	2800	2800	5153	5153	5529	5529	*6-6 6-6 6-6 6-6	3680	4050
	ZM500	5000	1700 *1850	1800 *2300	2426	2426	2050	2050	3050	3050	5663	5663	6039	6039	*6-6	3750	4120
	ZM550	5500	1300 *1750	1350 *2100	2726	2726	2350	2350	3350	3350	6163	6163	6539	6539	*6-6	3860	4230
	ZM600	6000	900 *1700	950 *1800	2876	2876	2500	2500	3600	3600	6663	6663	7039	7039	*6-6	3930	4300
Wide View Full Free 3-Stage Mast	ZSM360	3600	2000	2500	1156	1156	800	800	1570	1570	4283	4283	4639	4639	6-6	3520	3890
	ZSM400	4000	2000	2500	1306	1306	950	950	1820	1820	4683	4683	5039	5039	6-6	3550	3920
	ZSM435	4350	1950 *1950	2300 *2450	1406	1406	1050	1050	2070	2070	5033	5033	5389	5389	*6-6	3580	3950
	ZSM450	4500	1900 *1900	2300 *2450	1456	1456	1100	1100	2220	2220	5183	5183	5539	5539	*6-6	3600	3970
	ZSM470	4700	1850 *1900	2050 *2400	1521	1521	1165	1165	2320	2320	5377	5377	5733	5733	*6-6	3610	3980
	ZSM480	4800	1850 *1850	2000 *2400	1566	1566	1210	1210	2420	2420	5483	5483	5839	5839	*6-6	3620	3990
	ZSM500	5000	1650 *1800	1800 *2350	1656	1656	1300	1300	2620	2620	5683	5683	6039	6039	*6-6	3650	4020
	ZSM540	5400	1450 *1750	1550 *2200	1756	1756	1400	1400	2745	2745	6083	6083	6439	6439	*3-6	3680	4050
	ZSM600	6000	1000 *1600	1100 *1800	1956	1956	1600	1600	2870	2870	6683	6683	7039	7039	*3-6	3780	4150

Note: \*stands for the rated capacity when the front tyre is double-tyre.

3t/3.5t H3 series internal combustion forklift mast configuration table

Mast type	Mast model	Max. lifting height (mm)	Load capacity (load center 500mm)(kg)		Free lift height (mm)				Height(mm)				Mast tilt angle α/β (°)	Service weight (kg)
									Height (mast lowered)		Height (mast Lifted)			