

**CPCD 50/60/70/85/100**  
W2G3/QCG3/CU2G3

**CPCD 50/60/70**  
M1G3

**CP(Q)YD 50/60/70**  
KU3G3/KU1G3



## 5-10 t

G3 series Internal Combustion  
Counterbalanced Forklift Truck



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**5-10 t**  
G3 SERIES



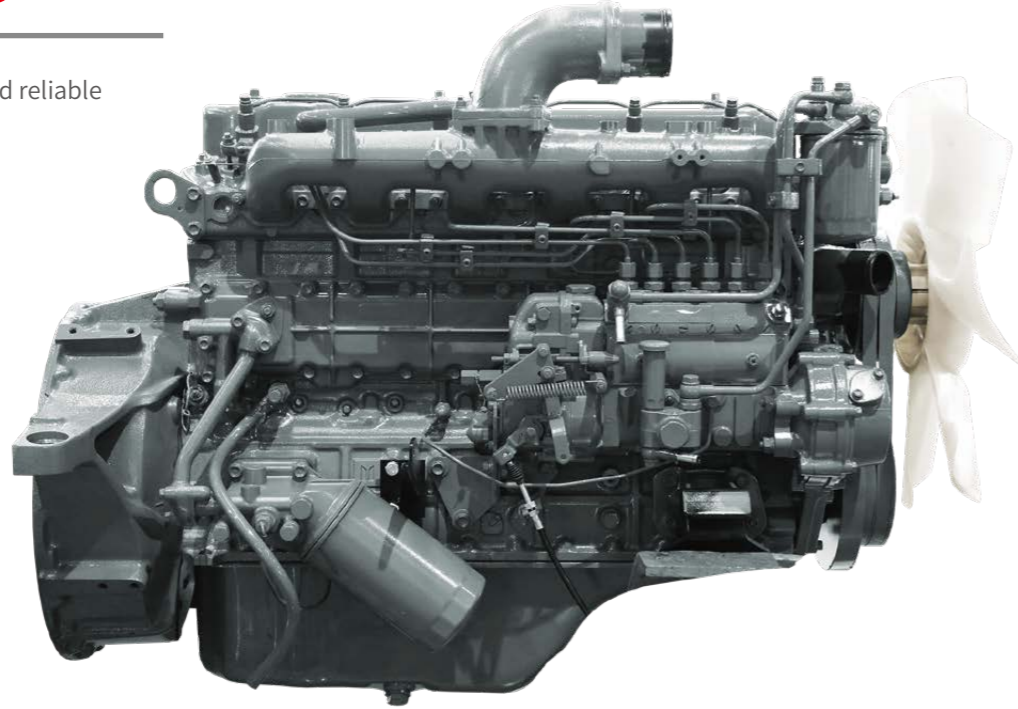
Our power and confidence are from  
reliable high quality products.

Elegance in appearance, excellent in performance

INTERNAL COMBUSTION  
COUNTERBALANCED  
FORKLIFT TRUCK

## Powerful engine

Classic engine, energy saving and reliable



Standard DANFOSS hydraulic variable system and load sensitive steering system are energy saving and high efficiency;



**LED lighting system**  
Low energy consumption,  
high brightness and long life

**Variable piston hydraulic pump**



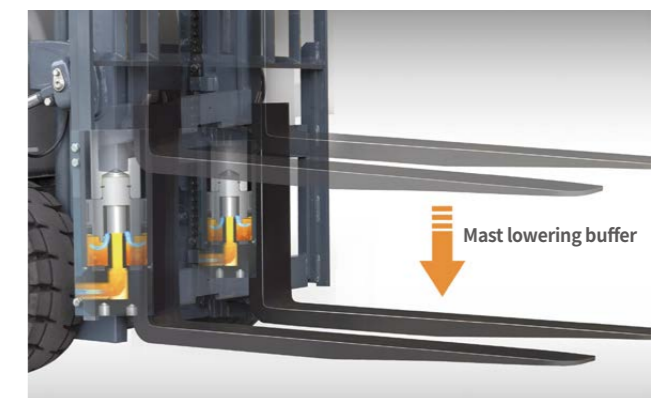
## A reliable drive system

- The transmission box designed and manufactured by HELI specially for the model is equipped on the truck. As reliable transmission system produced by HELI, it has been validated by over twenty years experience in the world market. Meanwhile, various ancillary devices of the power system ensure the reliability effectively.

- Through LCD instrument and good human-computer interaction, the operator can monitor the truck status in real time.

- Standard configuration of oil cylinder lower buffer, comfortable operation.

- Multi system joint optimization design (active noise reduction of engine, transmission box, axle and hydraulic oil pump, application of sealing sound insulation materials of the whole truck) reduces truck noise.



### Ratchet type parking brake



It contains semi-enclosed normal seat, and adopts the techniques which are weight stepless adjustment and shock absorption, and vacuum cold foam molding. Seat armrest and backrest is a whole. Contact switch is optional.



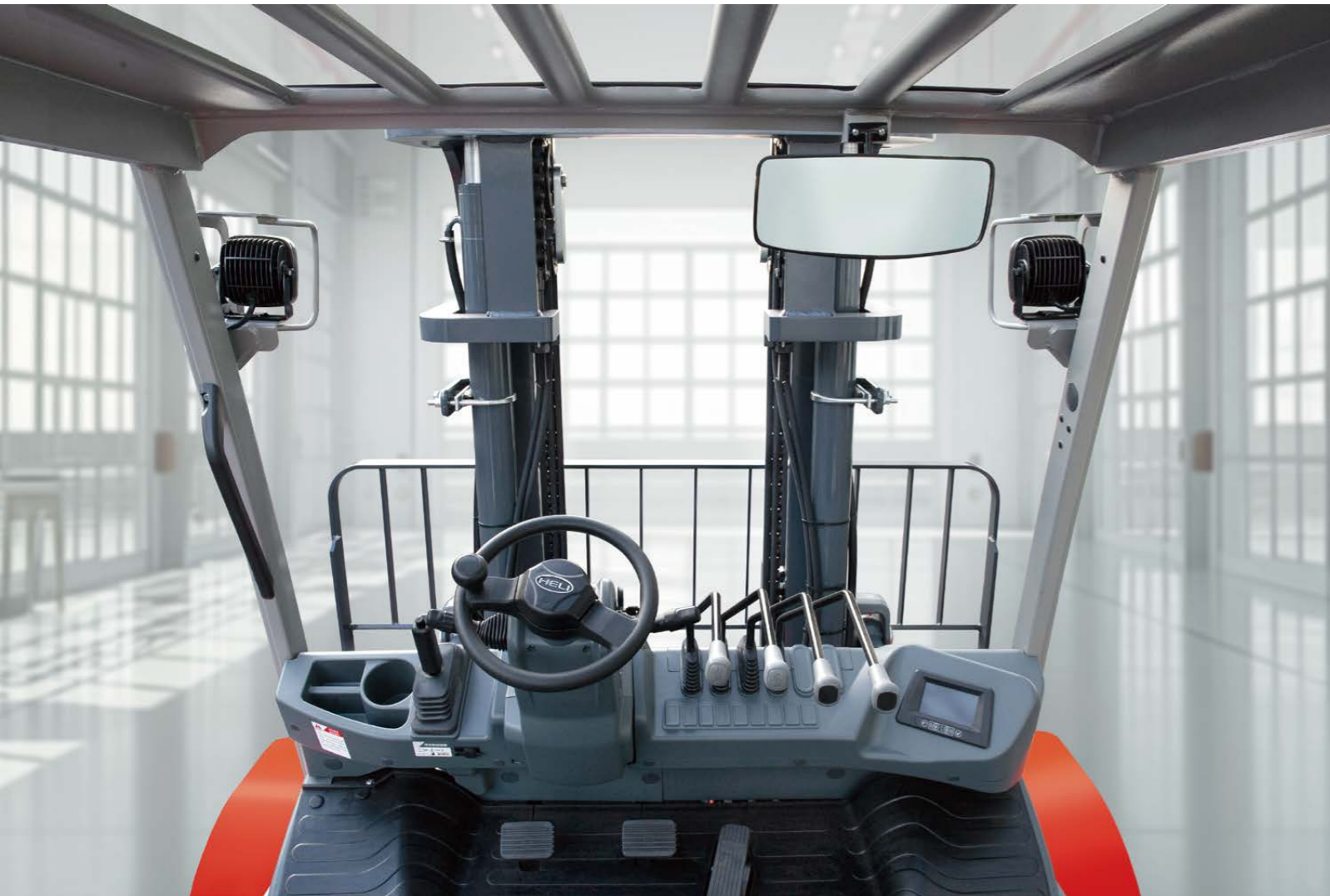
## High efficient and safe

Smart protection on gearbox and engine ensure the safety of the whole truck.



Smart protection on high engine water temperature, low oil pressure, intake pressure and temperature

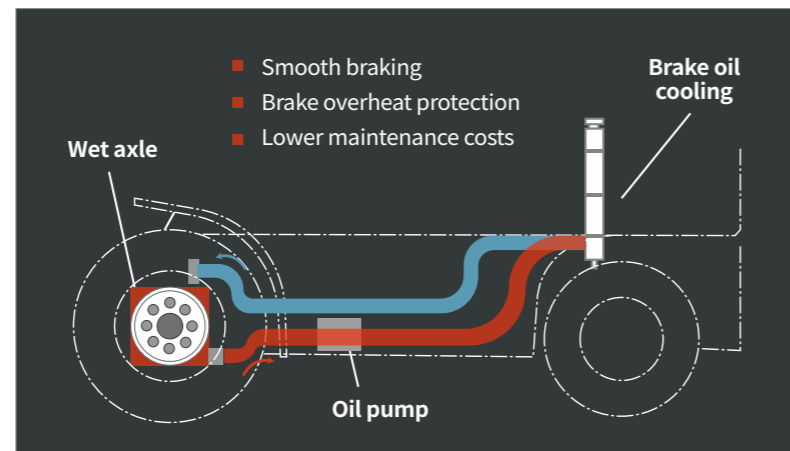
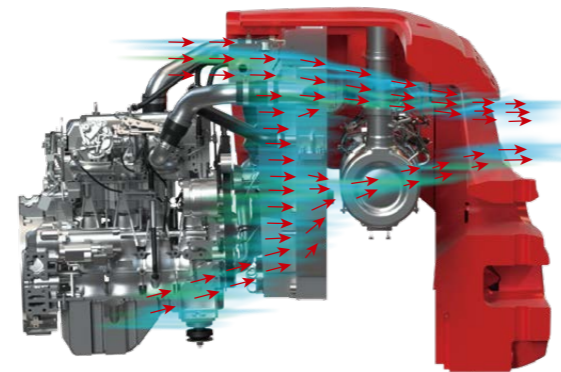
- Standard LED lamps, energy saving, more brighter, long service life.
- Load sensing steering and dual pump confluence technology, energy consumption reduce by 10%.
- The truck is equipped with large capacity air filter with safety filter element and pressure alarm function;
- The optimal design of power suspension increases the limit of limit impact to protect the power assembly from accidental impact;
- Truck safety warning: reverse image system, warning light, etc. (optional)



# Reliable quality

HELI has been committed to the research of truck reliability for many years, and the core parts have been verified by the market for a long time. The truck goes through high standard reliability test before marketing, long-time quality tracking and verification after marketing, and strict control of various performance indicators.

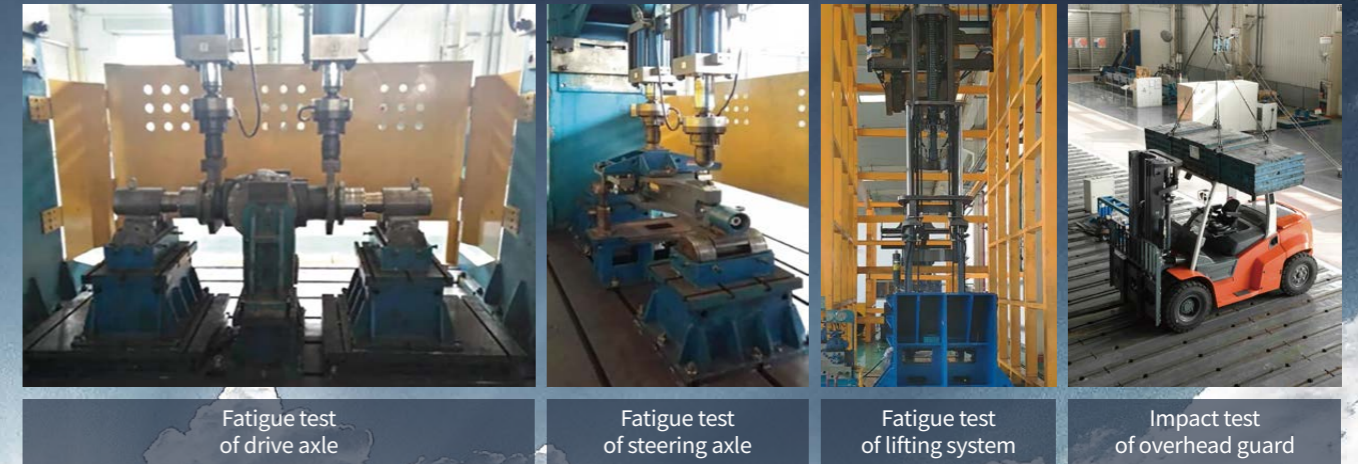
- The CAE forward design improves the strength of structural parts;
- Wet braking with forced oil cooling radiator ensures the stability and reliability of braking performance under extreme conditions;
- High performance cooling system ensures the heat dissipation performance of the whole truck.



<p>Fan</p>	Air volume	18% ↑
	Static pressure	40% ↑
	Efficiency	35.7% ↑
	Noise	1.5dB(A) ↓
	Axial deformation	35.7% ↓
<p>Radiator</p>	Water	15% ↑
	Transmission oil	50% ↑
	New drive axle oil radiator	

Note: the above data are from the comparison with G series 7t internal combustion forklift truck

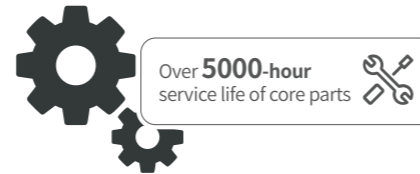
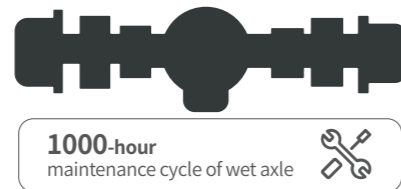
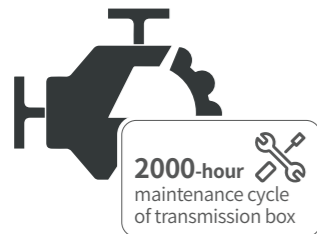
Harsh truck key parts endurance reliability test ensures the long-term reliability of core parts.



Higher standard endurance reliability test and high-intensity industrial verification of the whole truck ensures the reliability of long-term use of the whole truck;

## Efficient and convenient maintenance

Super long maintenance cycle of core parts

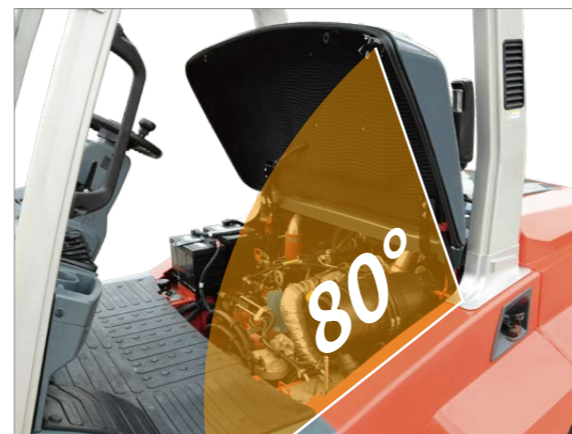


Integrated electrical cabinet and embedded instrument make disassembly and maintenance easy;

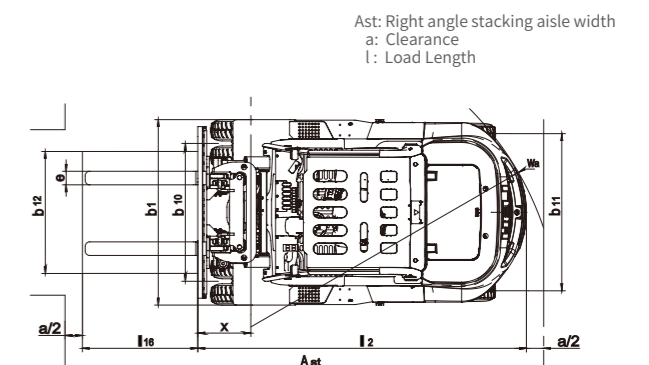
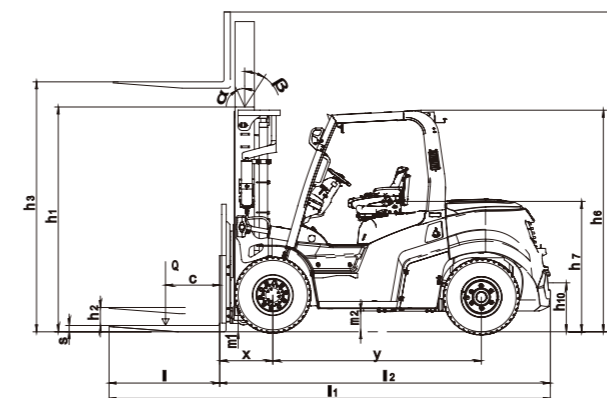


Timely remind maintenance information is given through instrument;

Large opening angle hood and detachable front and rear floor make check and repair easier;



Manufacturer and Technical Data						
Characteristics						
1.01	Manufacturer			<b>HELI</b>		
1.02	Model		CPCD50	CPCD60	CPCD70	CPCD85 CPCD100
1.03	Power mode		Diesel			
1.04	Rated capacity	Q	kg	5000	6000	7000 9000 10000
1.05	Load center distance	c	mm	600		
1.06	Driving mode			Seat-type		
Dimension parameter						
2.01	Mast tilt angle (forward/backward)	$\alpha/\beta$	$^{\circ}$	6/12		
2.02	Height (mast lowered)	h1	mm	2480		2700 2850
2.03	Free lifting height	h2	mm	155	160	165 190 200
2.04	Lifting height (standard)	h3	mm	3000		
2.05	Max. height, extended (with backrest)	h4	mm	4400		4250 4415
2.06	Height of overhead guard	h6	mm	2450		2560
2.07	Seat height relating to SIP (to ground)	h7	mm	1435		1540
2.08	Towing coupling height	h10	mm	535		600
2.09	Ground clearance (laden, between mast)	m1	mm	155		230
2.10	Overall length (with fork)	L1	mm	4705	4795	4865 5172 5422
2.11	Overall length (without fork)	L2	mm	3485	3575	3645 3952 4202
2.12	Front overhang	x	mm	575	580	585 687 702
2.13	Wheelbase	y	mm	2300		2500 2775
2.14	Overall width	b1	mm	2045		2165
2.15	Distance across fork-arms, Max./Min.	b5	mm	300-1845		470-1990 470-2100
2.16	Fork size: thickness x width x length	s/e/l	mm	55x150x1220	60x150x1220	65x150x1220 70x175x1220 80x175x1220
2.17	Tread, front	b10	mm	1520		1600 1600
2.18	Tread, rear	b11	mm	1700		1700 1700
2.19	Right angle stacking aisle width for pallet 1000 x 1200 mm crossways	Ast	mm	5000	5060	5125 5517 5842
2.20	Min. outside turning radius	Wa	mm	3225	3280	3340 3630 3940
Tyres						
3.01	Wheels, number front/rear (x=driven wheels)			4X/2		
3.02	Tyre type front/rear			Pneumatic-tyre		
3.03	Tyre size, front			8.25-15-14PR		9.00-20-14PR
3.04	Tyre size, rear			8.25-15-14PR		9.00-20-14PR
other						
4.01	Transmission type			Hydraulic transmission - electro-hydraulic directional change		
4.02	Transmission number of speed (fwd/bwd)			2/2		
4.03	Service brake			Powered brake-pedal type		
4.04	Parking brake			Mechanical-hand brake lever type		
4.05	Operating pressure for attachments		mpa	20.5		
4.06	Battery voltage/Capacity		V/Ah	2X12/80		
Performance Data						
5.01	Travel speed (laden/unladen)		km/h	29/31	29/31	29/31 29/31 29/31
5.02	Lift speed (laden/unladen)		mm/s	480/520	480/520	480/520 415/380 330/350
5.03	Lowering speed (laden/unladen)		mm/s	WITHOUT LOAD $\geq 300$ WITH FULL LOAD $\leq 600$		
5.04	Max. drawbar pull (laden/unladen)		kN	62	62	62 62 62
5.05	Max. gradeability (laden/unladen)		%	42/20	36/20	32/20 24/20 20/20
5.06	Weight		kg	8320	8850	9440 11450 12500
Combustion-engine						
6.01	Engine manufacturer/Mode			ISUZU 6BG1		
6.02	Rated power/Speed		Kw/rpm	82/2000		
6.03	Max. torque/Speed		Nm/rpm	415/1400-1600		
6.04	Cylinder number-bore x stroke			6-105 x 125		
6.05	Engine displacement		L	6.494		
6.06	Configuration NO.			W2G3		



Ast: Right angle stacking aisle width  
a: Clearance  
l: Load Length

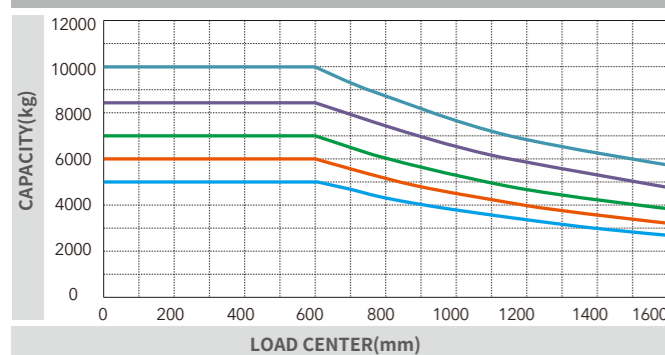
## Data 1

Manufacturer and Technical Data											
Model		CPCD50	CPCD60	CPCD70	CPCD85	CPCD100	CPCD50	CPCD60	CPCD70	CPCD85	CPCD100
Travel speed (laden/unladen)	km/h	28/31	28/31	28/31	27/30	27/30	26/30	26/30	26/30	26/30	26/30
Lift speed (laden/unladen)	mm/s	480/520	480/520	480/520	415/380	330/350	480/520	480/520	480/520	415/380	330/350
Lowering speed (laden/unladen)	mm/s	WITHOUT LOAD ≥ 300 WITH FULL LOAD ≤ 600			WITHOUT LOAD ≥ 300 WITH FULL LOAD ≤ 600						
Max.drawbar pull (laden/unladen)	kN	62	62	62	62	62	62	62	62	62	62
Max.gradeability (laden/unladen)	%	38/20	34/20	30/20	22/20	20/20	40/22	34/20	30/20	22/20	20/20
Weight	kg	8320	8850	9440	11450	12500	8320	8850	9440	11450	12500
Optional engine model and truck main specifications											
Engine manufacturer/Mode		Quanchai 4J1-115C32					Cummins QSF3.8				
Rated power/Speed	Kw/rpm	85/2200					86/2200				
Max. torque/Speed	Nm/rpm	500/1600					470/1100-1700				
Cylinder number-bore x stroke		4-105 × 124					4-102 × 115				
Engine displacement	L	4.3					3.8				
Configuration NO.		QCG3					CU2G3				

## Data 2

Manufacturer and Technical Data							
Model		CPCD50	CPCD60	CPCD70	CP(Q)YD50	CP(Q)YD60	CP(Q)YD70
Travel speed (laden/unladen)	km/h	26/30	26/30	26/30	20/26	20/26	20/26
Lift speed (laden/unladen)	mm/s	450/470	440/470	420/460	475/430	475/430	400/370
Lowering speed (laden/unladen)	mm/s	WITHOUT LOAD ≥ 300 WITH FULL LOAD ≤ 600			WITHOUT LOAD ≥ 300 WITH FULL LOAD ≤ 600		
Max.drawbar pull (laden/unladen)	kN	40	40	40	52	52	52
Max.gradeability (laden/unladen)	%	19/23	19/20	19/20	36/20	32/20	28/20
Weight	kg	8320	8850	9440	8320	8850	9440
Optional engine model and truck main specifications							
Engine manufacturer/Mode		Mitsubishi S6S-T			Kubota/WG3800		
Rated power/Speed	Kw/rpm	63.9/2300			(LPG):63.2/2400; (GAS, LPG)54.6/2400; (GAS, LPG) :56.8, 59.9/2400		
Max. torque/Speed	Nm/rpm	285/1700			(LPG)290/1200; (GAS, LPG)258/1200; (GAS, LPG):265, 282/1200		
Cylinder number-bore x stroke		6-94 × 120			4-100 × 120		
Engine displacement	L	4.996			3.8		
Configuration NO.		M1G3			KU3G3/KU1G3		

## Load curve



CPCD50 CPCD60 CPCD70 CPCD85 CPCD100

**Note:** The vertical axis stands for load capacity and the horizontal axis stands for load center which is calculated from the front surface of the forks to the gravity of the standard load. The standard load means a cubic with 1200mm edge length. When mast is tilted forward, using non-standard forks or loading large goods, the load capacity will be reduced. The load capacity of standard mast at different load center can be known from this load chart.

## 5-7t Wide View Standard Mast

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)			Mast height lowered(mm)	Service weight(kg)			Mast tilting angle (°)α/β
		CPCD50	CPCD60	CPCD70		CPCD50/60/70	CPCD50	CPCD60	
M200	2000	5000	6000	7000	2080	8325	8855	9769	6°/12°
M250	2500	5000	6000	7000	2230	8389	8919	9791	6°/12°
M270	2700	5000	6000	7000	2330	8421	8951	9811	6°/12°
M300	3000	5000	6000	7000	2480	8470	9000	9860	6°/12°
M330	3300	5000	6000	7000	2630	8519	9049	9909	6°/12°
M350	3500	5000	6000	7000	2730	8551	9081	9941	6°/12°
M375	3750	5000	6000	7000	2855	8592	9122	9982	6°/12°
M400	4000	5000	6000	7000	3030	8758	9288	10148	6°/12°
M425	4250	5000	6000	7000	3155	8798	9328	10188	6°/12°
M450	4500	5000	6000	7000	3280	8839	9369	10229	6°/12°
M475	4750	5000	6000	7000	3405	8880	9410	10270	6°/6°
M500	5000	5000	6000	7000	3530	8920	9450	10310	6°/6°
M550	5500	4700	5700	6700	3830	9114	9644	10504	6°/6°
M600	6000	4400	5400	6400	4080	9196	9726	10586	6°/6°

## 5-7t Wide View Full Free 2-Stage Mast

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)			Mast height lowered(mm)	Free lift (with backrest) (mm)	Service weight(kg)			Mast tilting angle (°)α/β
		CPCD50	CPCD60	CPCD70			CPCD50/60/70	CPCD50	CPCD60	
ZM250	2500	5000	6000	7000	2210	840	8509	9039	9899	6°/12°
ZM270	2700	5000	6000	7000	2310	940	8546	9076	9936	6°/12°
ZM300	3000	5000	6000	7000	2460	1090	8603	9133	9993	6°/12°
ZM330	3300	5000	6000	7000	2610	1240	8660	9190	10050	6°/12°
ZM350	3500	5000	6000	7000	2710	1340	8697	9227	10087	6°/12°
ZM375	3750	5000	6000	7000	2835	1465	8745	9275	10135	6°/12°
ZM400	4000	5000	6000	7000	3010	1640	8920	9450	10310	6°/12°
ZM425	4250	5000	6000	7000	3135	1765	8972	9502	10362	6°/12°
ZM450	4500	4900	5900	6900	3260	1890	9015	9545	10405	6°/12°
ZM475	4750	4800	5800	6800	3385	2015	9062	9582	10452	6°/6°
ZM500	5000	4700	5700	6700	3510	2140	9099	9629	10489	6°/6°
ZM550	5500	4600	5600	6600	3810	2440	9319	9849	10709	6°/6°
ZM600	6000	4300	5300	6300	4060	2690	9414	9944	10804	6°/6°

Note: (1) 5-6t: the free lift without backrest 260mm increased, (2) 7t: the free lift without backrest 180mm increased.

## 5-7t Wide View Full Free 3-Stage Mast

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)			Mast height lowered(mm)	Free lift (with backrest) (mm)	Service weight(kg)			Mast tilting angle (°)α/β
		CPCD50	CPCD60	CPCD70			CPCD50/60/70	CPCD50	CPCD60	
ZSM360	3600	5000	6000	7000	2335	910	9153	9683	10443	6°/6°
ZSM400	4000	5000	6000	6800	2460	1040	9213	9743	10503	6°/6°
ZSM435	4350	5000	5800	6700	2585	1156	9271	9801	10561	6°/6°
ZSM480	4800	4700	5700	6700	2740	1310	9468	9998	10758	6°/6°
ZSM500	5000	4600	5600	6600	2805	1380	9499	10029	10789	6°/6°
ZSM540	5400	4500	5500	6200	2940	1510	9568	10098	10858	6°/6°
ZSM600	6000	4200	5200	6000	3135	1710	9657	10187	10947	6°/6°
ZSM650	6500	3600	4600	5200	3405	1975	9746	10276	11036	6°/6°
ZSM700	7000	3200	4000	4700	3510	2085	9799	10329	11089	6°/6°

Note: (1) 5-6t: the free lift without backrest 260mm increased, (2) 7t: the free lift without backrest 180mm increased.

**8.5-10t Wide View Standard Mast**

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)		Mast height lowered(mm)		Service weight(kg)		Mast tilting angle (°)α/β
		CPCD85	CPCD100	CPCD85	CPCD100	CPCD85	CPCD100	
M250	2500	8500	10000	2450	2600	10921	12679	6°/12°
M270	2700	8500	10000	2550	2700	10975	12719	6°/12°
M300	3000	8500	10000	2700	2850	11600	12800	6°/12°
M330	3300	8500	10000	2850	3000	11701	12848	6°/12°
M350	3500	8500	10000	2950	3100	11846	12893	6°/12°
M375	3750	8500	10000	3075	3225	11926	12943	6°/12°
M400	4000	8500	10000	3250	3400	12101	13083	6°/12°
M425	4250	8500	10000	3375	3525	12256	13138	6°/12°
M450	4500	8300	9800	3500	3650	12376	13188	6°/12°
M475	4750	8100	9600	3625	3775	12521	13245	6°/6°
M500	5000	7900	9400	3750	3900	12636	13300	6°/6°
M550	5500	7500	8000	4050	4200	12958	13601	6°/6°
M600	6000	7200	7500	4300	4450	13161	13651	6°/6°

**8.5-10t Wide View Full Free 2-Stage Mast**

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)		Mast height lowered(mm)		Free lift (with backrest)(mm)		Service weight(kg)		Mast tilting angle (°)α/β
		CPCD85	CPCD100	CPCD85	CPCD100	CPCD85	CPCD100	CPCD85	CPCD100	
ZM250	2500	8500	10000	2450	2600	1250	1215	11647	12679	6°/12°
ZM270	2700	8500	10000	2550	2700	1350	1315	11673	12719	6°/12°
ZM300	3000	8500	10000	2700	2850	1500	1465	11715	12800	6°/12°
ZM330	3300	8500	10000	2800	2975	1650	1615	11756	12848	6°/12°
ZM350	3500	8500	10000	2950	3100	1750	1715	11784	12893	6°/12°
ZM375	3750	8500	10000	3075	3225	1875	1840	11819	12943	6°/12°
ZM400	4000	8500	10000	3250	3400	2050	2015	11956	13083	6°/12°
ZM425	4250	8500	10000	3375	3525	2175	2140	11990	13138	6°/12°
ZM450	4500	8100	9600	3500	3650	2300	2265	12025	13188	6°/12°
ZM475	4750	7900	9400	3625	3775	2425	2390	12060	13245	6°/6°
ZM500	5000	7700	9200	3750	3900	2550	2515	12095	13098	6°/6°
ZM550	5500	7300	7800	4050	4200	2850	2815	12165	13153	6°/6°
ZM600	6000	7000	7300	4300	4450	3100	3065	12235	13203	6°/6°

Note:8.5-10t: free lift without backrest.

**8.5-10t Wide View Full Free 3-Stage Mast**

Mast model	Max. fork height (mm)	Load capacity (load center 600mm)(Kg)		Mast height lowered(mm)		Free lift (with backrest)(mm)		Service weight(kg)		Mast tilting angle (°)α/β
		CPCD85	CPCD100	CPCD85	CPCD100	CPCD85	CPCD100	CPCD85	CPCD100	
ZSM360	3600	7500	9000	2450	2570	1200	1150	12241	13536	6°/12°
ZSM400	4000	7500	9000	2575	2700	1330	1280	12312	13628	6°/12°
ZSM435	4350	7500	9000	2700	2820	1450	1400	12386	13708	6°/12°
ZSM450	4500	7300	8800	2750	2870	1500	1450	12413	13748	6°/6°
ZSM480	4800	7100	8600	2850	2970	1600	1550	12474	13816	6°/6°
ZSM500	5000	6900	8400	2950	3035	1700	1615	12530	13862	6°/6°
ZSM540	5400	6500	7000	3075	3225	1830	1805	12604	13996	6°/6°
ZSM600	6000	6200	6500	3375	3425	2130	2005	12775	14136	6°/6°
ZSM650	6500	5800	6100	3600	3590	2350	2170	12905	14254	6°/6°
ZSM700	7000	5500	5800	3750	3855	2500	2435	12993	14432	6°/6°

Note:8.5-10t: free lift without backrest.

**Note: The service weight in the table is the weight of the truck assembled with ISUZU engine. When the installation method of fork carrier or attachment is a series axis type, the standard configuration is without backrest. When it is a hook type, the backrest is standard configuration.**

**Configuration 1**

Parts			
Packaging method	HELI packing	●	
	Neutral packing	○	
Economic and energy saving	Load sense steering	●	
	Double pump confluence	●	
Intelligent security	Hydraulic power braking	●	
	Tilting cylinder with self-locking valve	●	
	Reversing buzzer	●	
	Reverse radar and camera	○	
	Overspeed alarm (speed limit value adjustable)	○	
	OPS (Only for driving)	○	
	OPS (Driving and lifting)	○	
	OPS (Special for Australia)	○	
	Electric power switch	○	
	Engine oil pressure alarm	●	
	Oil water separator indicator	●	
	Charging indicator	●	
	Water temperature gauge	●	
	Neutral start switch	●	
	Fire extinguisher	○	
	Spark arrester	○	
	Fuel cap with lock	●	
	Engine hood locking device	○	
	Reliability	Drum brake drive axle	●
		Wet-type brake drive axle (mandatory cooling)	○
Hydraulic oil radiator		○	
9 inches double filter element air filter(with pressure alarm)		●	
Comfortable and convenient	Self discharging ash filter	○	
	Dry-type double air filter	○	
	Electro-hydraulic reversing	●	
	Steering wheel with knob (HELI packing)	●	
	Steering wheel without knob (HELI packing)	○	
	Full hydraulic power steering	●	
	Lowering buffering for rear lifting cylinder, upper buffering for front lifting cylinder	●	
	Speed limiting valve for lifting oil circuit	●	
	Man-machine interactive liquid crystal instrument	●	
	Fan	○	
	USB interface	●	
	Get on/off handle	●	

Note: “●” Standard; “○” Optional.ISUZU standard universal key (2 pieces)

**Configuration 2**

Parts		
Cab/ wind shield	Front windshield (with wiper)	○
	Rear windshield (without wiper)	○
	Glass ceiling	○
	Panel mounted cab	○
	Single cooling air conditioner	○
	Cold and warm air conditioner	○
Lifting system	Heater	○
	Basic wide view mast	●
	Two stages full free wide view mast	○
	Three stages full free wide view mast	○
	Hook type of fork carriage (5/6/7t)	●
	Hydraulic fork positioner (8.5/10t)	●
	Widened fork carriage	○
	Backrest (5/6/7t)	●
	Non standard fork and attachment	○
	Lights	LED lights for whole truck
LED rear working lights		○
Rear side of blue light		○
Three sides of blue strip light		○
Three sides of red strip light		○
LED flashing warning light (assembly type)		○
Tyre	LED rotary warning light (assembly type)	○
	LED rotary buzzerlight (assembly type)	○
Others	Pneumatic tyre	●
	Solid tyre	○
	Metric thread	●
	Middle exhaust	●
	High exhaust	○
	Counterweight with protective net	●
	Counterweight and mast sling	○
	Steering cylinder sleeve	●
	Tilting cylinder sleeve	○
	No universal Key	●
	Universal keys (2 pieces)	○
	Universal keys (4 pieces)	○
Traction device	●	
Driver's tool kits	●	
Customized color	○	

Note: “●” Standard; “○” Optional.ISUZU standard universal key (2 pieces)