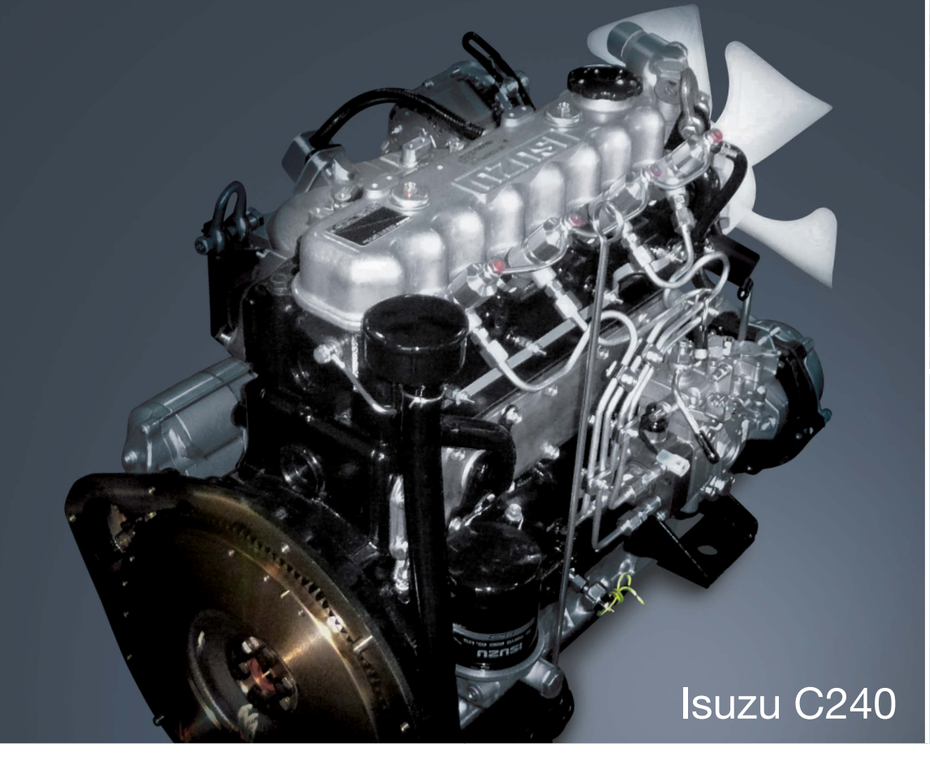
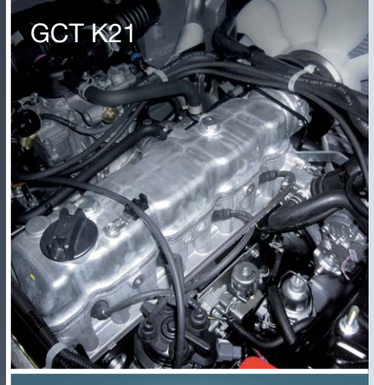
TCM

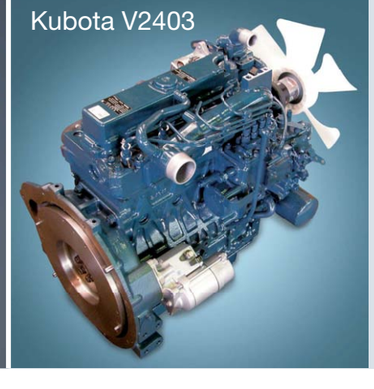
SMART MACHINE

Engine-powered Forklift

2-3ton (Counterbalanced Type)







Engine line-ups to meet diversified needs

Smart Machine Series with Isuzu C240, GCT K21 and Kubota V2403

UniCarriers is now pleased to offer Smart Machine Series, the internal combustion engine forklift model with three types of engines, including the two newly added engines.

Smart Machine Series newly welcomed Isuzu C240 diesel engine, which has been installed to TCM iNOMA, and GCT K21, the gasoline engine derived from automobile technology. These two engines and Kubota V2403 diesel engine from the previous model have been widely known as reliable and reputable engines used over a number of units in the field of industrial trucks. As the result, the three engines will meet the diversified needs from the markets increasing the values of Smart Machine Series.

		C240	V2403	K21
Displacement	cc	2369	2434	2065
Rated horsepower	kW / rpm	35.4 / 2500	35.5 / 2600	34.6 / 2250
Rated torque	Nm / rpm	140.0 / 1800	156.5 / 1600	153.5 / 1600

Comfortable Operator Compartment

Expansive floor space for easy foot movement

An amazing floor space by placing tilt cylinders under the floor, reserving expansive footwell as well as providing easy entry and exit.

Multifunctional suspension seat

Features include reinforced driver support, operator weight balance adjustment, recliner and seat belt.

Reduced fatigue due to circular steering wheel

The small diameter (300mm outer diameter) steering wheel gives improved maneuverability as well as offering easy access to the operator compartment.

Convenient parking lever

The lever is positioned to the right of the steering wheel for easy entry and exit. A double action brake release on the lever further improves safety.

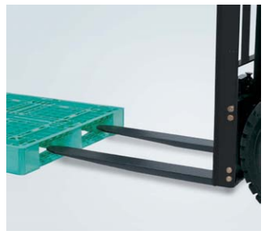
Easy entry and exit from an extra wide step

The secure step with enlarged foot step enables greater comfort and less fatigue while getting on and off the truck.

Portable glove box

Cup holder

Excellent Safety



Innovative fork-landing mechanism

(Available for VM type mast) The fork-lowering speed decelerates at a height of approximately 150mm above the ground enabling accurate placement of the forks into the load fork pockets or pallet.

High-mounted rear combination lights

The brake lights are easily visible at the top of the overhead guard. Recessed for protection, they are vibration resistant for long bulb life.

Single-piece headguard

The front and rear pillars are welded together in a single-piece structure to give additional strength to the entire frame.

Anti-slip mat on the hood

A rubber strip is attached to the hood to prevent slippage while getting on and off.

Major Options

Rotating warning light

Rear working light

Windshield wiper

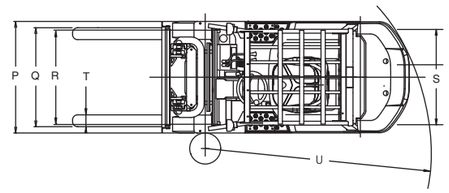
Insulator kit

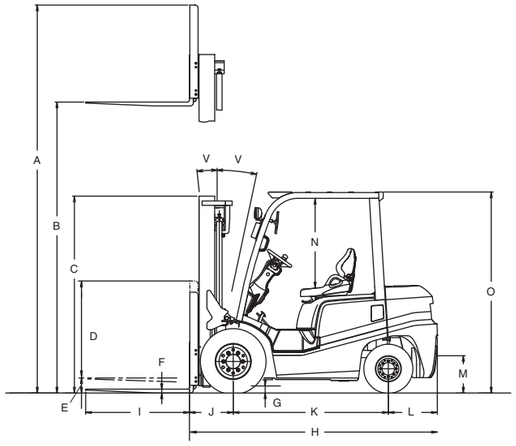
STANDARD SPECIFICATIONS

Characteristics	1	Manufacturer					UniCarriers							
	2	Model					FD20T3CZ	FD25T3CZ	FD30T3CZ	FD20T4C	FD25T4C	FD30T4C	FG20T3C	FG25T3C	FG30T3C
	3	Load Capacity			kg		2000	2500	3000	2000	2500	3000	2000	2500	3000
	4	Load Center			mm		500			500			500		
	5	Power Type					Diesel			Diesel			Gasoline		
	6	Operator Position					Seated			Seated			Seated		
	7	Tire Type					Pneumatic			Pneumatic			Pneumatic		
	8	Wheels (x=Driven)		Front / Rear			2 × / 2			2 × / 2			2 × / 2		
Dimensions	9	Maximum Fork Height			mm	B	3000			3000			3000		
	10	Free Lift			mm	E	110		165	110		165	110		165
	13	Fork Size		L × W × T	mm	I×T×F	1070 × 122 × 40		1070×125×45	1070 × 122 × 40		1070×125×45	1070 × 122 × 40		1070×125×45
		Fork Spread (Outside)		Max. / Min.	mm	Q	1020 / 245		1090 / 250	1020 / 245		1090 / 250	1020 / 245		1090 / 250
	14	Tilt Angle		Fwd. / Bwd.	deg.	V	6 / 12			6 / 12			6 / 12		
	15	Length to Fork Face			mm	H	2485	2555	2705	2485	2555	2705	2485	2555	2705
	16	Overall Width			mm	P	1150		1225	1150		1225	1150		1225
	17	Mast Height Fork Lowered			mm	C	2030		2075	2030		2075	2030		2075
	18	Mast Height Fork Raised			mm	A	4030		4250	4030		4250	4030		4250
	19	Overhead Guard Height			mm	O	2070 (2130)		2090 (2150)	2070 (2130)		2090 (2150)	2070 (2130)		2090 (2150)
	20	Operator Seat Height			mm		1045		1070	1045		1070	1045		1070
	21	Turning Radius (Outside)			mm	U	2170	2240	2400	2170	2240	2400	2170	2240	2400
	22	Load Distance			mm	J	450		480	450		480	450		480
		Rear Overhang			mm	L	435	505	525	435	505	525	435	505	525
	23	Basic Right Angle Stacking Aisle Width (1100mm × 1100mm)			mm		3920	3990	4180	3920	3990	4180	3920	3990	4180
Performance	24	Speed	Max. Travel	Full Load	km/h		18.5		19.0	18.5		19.0	18.5		19.0
				No Load	km/h		19.0		19.5	19.0		19.5	19.0		19.5
	25		Lifting	Full Load	mm/s		550		450	530		450	520		440
				No Load	mm/s		580		470	600		490	580		490
	26		Lowering	Full Load	mm/s		450			450			450		
				No Load	mm/s		550		450	550		450	550		450
	28	Max. Drawbar Pull		Full Load	kN		14.7		13.7	16.7		14.7	16.7		14.2
				No Load	kN		8.3		9.8	8.3		9.8	8.3		9.8
	30	Max. Gradeability		Full Load	%		25	20	18	28	23	19	28	24	18
				No Load	%		20	18	20	20	18	20	20	18	20
Weight	32	Total Weight			kg		3270	3630	4240	3275	3640	4245	3165	3530	4135
	33	Weight Distribution	Full Load	Front	kg		4655	5385	6315	4660	5395	6335	4610	5345	6265
				Rear	kg		615	745	925	615	745	910	555	685	870
	34		No Load	Front	kg		1470	1400	1585	1480	1410	1605	1425	1360	1535
				Rear	kg		1800	2230	2655	1795	2230	2640	1740	2170	2600
Chassis & Wheels	35	Tires	Number	Front / Rear			2 / 2			2 / 2			2 / 2		
	36		Size	Front			7.00-12-12PR		28×9-15-12PR	7.00-12-12PR		28×9-15-12PR	7.00-12-12PR(I)		28×9-15-12PR(I)
	37			Rear			6.00-9-10PR		6.50-10-10PR	6.00-9-10PR		6.50-10-10PR	6.00-9-10PR(I)		6.50-10-10PR(I)
	38	Wheelbase			mm	K	1600		1700	1600		1700	1600		1700
	39	Tread		Front	mm	R	970		1000	970		1000	970		1000
				Rear	mm	S	970			970			970		
		Backrest Height			mm	D	1000		1220	1000		1220	1000		1220
		Overhead Guard Clearance			mm	N	1000 (1060)			1000 (1060)			1000 (1060)		
		Counterweight Height			mm		1110		1130	1110		1130	1110		1130
		Drawbar Pin Center Height			mm	M	530		560	530		560	530		560
		Floor Height			mm		650		680	650		680	650		680
	40	Underclearance	Minimum with Load		mm	G	110		140	110		140	110		140
	41		Center of Wheelbase		mm		120		145	120		145	120		145
	42	Brake	Service				Foot			Foot			Foot		
	43		Parking				Hand			Hand			Hand		
Engine & Transmission	45	Battery	Voltage / Capacity (5 hours)		V/AH		12 / 55			12 / 55			12 / 55		
	49	Internal Combustion Engine	Manufacturer / Model				Isuzu / C240			Kubota / V2403			GCT / K21		
	50		Rated Horsepower / rpm		kW		35.4 / 2500			35.5 / 2600			34.6 / 2250		
	51		Rated Torque / rpm		Nm		140.0 / 1800			156.5 / 1600			153.5 / 1600		
	52		Number of Cylinders				4			4			4		
			Piston Displacement		cc		2369			2434			2065		
			Alternator Output		kW		0.54			0.72			0.6		
			Fuel Tank Capacity		lit.		70			70			70		
	55	Transmission	Type				Automatic			Automatic			Automatic		
			Stage	Fwd. - Rvs.			1 / 1			1 / 1			1 / 1		
	57	Operating Pressure			kg/cm²		17.7			17.7			17.7		

Overhead guard height and overhead guard clearance with (*): Each shows the figure for Australian & New Zealand markets

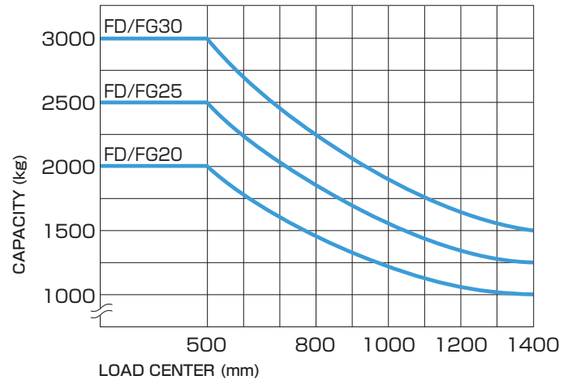
DIMENSIONS





GROUND CLEARANCE	FD/FG20	FD/FG25	FD/FG30
	mm	mm	mm
Mast	110	110	140
Frame	120	120	145
Front axle	125	125	145
Rear axle	150	150	175
Counter weight	155	155	185

LOAD CHART 2-3t



WIDE VIEW MAST

Wide View Mast VM

Mast Model	Rated Capacity 500mm load center(kg)				Max. Fork Height	Overall Mast Height		Tilting Angle F/B	Service Weight(kg)					
	FD/FG20		FD/FG25			Lowered	Raised with Backrest		FD/FG20			FD/FG25		
	PNEUMATIC	UNIQUE(SE)	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	deg	T3CZ	T4C	T3C	T3CZ	T4C	T3C
VM300	2000	2000	2500	2500	3000	2030	4030	6-12	3270	3275	3165	3630	3640	3530
VM350	2000	2000	2500	2500	3500	2280	4530	6-12	3310	3315	3205	3670	3680	3570
VM375	2000	2000	2500	2500	3750	2405	4780	6-6 *6-12	3330	3335	3225	3690	3700	3590
VM400	2000	2000	2500	2500	4000	2580	5030	6-6 *6-12	3385	3390	3280	3745	3755	3645
VM450	1900 *1950	1900 *1950	2150 *2450	2350 *2450	4500	2830	5530	6-6 *6-12	3425	3430	3320	3785	3795	3685
VM500	1650 *1700	1700	1700 *2250	2000 *2250	5000	3080	6030	6-6	3465	3470	3360	3825	3835	3725
VM550	*1500	*1500	*1700	*1700	5500	3380	6530	*3-6	3645	3650	3540	4005	4015	3905
VM600	*1300	*1300	*1400	*1400	6000	3630	7030	*3-6	3685	3690	3580	4045	4055	3945

Wide View Full Free 2-Stage Mast VFM

Mast Model	Rated Capacity 500mm load center(kg)				Max. Fork Height	Overall Mast Height		(2)Free lift with Backrest	Tilting Angle F/B	(3) Service Weight(kg)					
	FD/FG20		FD/FG25			Lowered	(1)Raised with Backrest			FD/FG20			FD/FG25		
	PNEUMATIC	UNIQUE(SE)	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	mm	deg	T3CZ	T4C	T3C	T3CZ	T4C	T3C
VFM250	2000	2000	2500	2500	2500	1780	3530	780	6-12	3285	3290	3180	3645	3655	3545
VFM270	2000	2000	2500	2500	2700	1880	3730	880	6-12	3305	3310	3200	3665	3675	3565
VFM275	2000	2000	2500	2500	2750	1905	3780	905	6-12	3310	3315	3205	3670	3680	3570
VFM300	2000	2000	2500	2500	3000	2030	4030	1030	6-12	3330	3335	3225	3690	3700	3590
VFM330	2000	2000	2500	2500	3300	2180	4330	1180	6-12	3355	3360	3250	3715	3725	3615
VFM350	2000	2000	2500	2500	3500	2280	4530	1280	6-12	3370	3375	3265	3730	3740	3630
VFM375	2000	2000	2500	2500	3750	2405	4780	1405	6-6 *6-12	3390	3395	3285	3750	3760	3650
VFM400	2000	2000	2500	2500	4000	2580	5030	1580	6-6 *6-12	3450	3455	3345	3810	3820	3710
VFM450	1900 *1950	1900 *1950	2150 *2450	2350 *2450	4500	2830	5530	1830	6-6 *6-12	3495	3500	3390	3855	3865	3755
VFM500	1650 *1700	1700	1700 *2250	2000 *2250	5000	3080	6030	2080	6-6	3535	3540	3430	3895	3905	3795

NOTE :(1) For height without backrest: -385mm
(2) For free lift without backrest: +385mm
(3) Weight for without backrest: -20kg

Wide View Full Free 3-Stage Mast VFHM

Mast Model	Rated Capacity 500mm load center(kg)				Max. Fork Height	Overall Mast Height		(2)Free lift with Backrest	Tilting Angle F/B	(3) Service Weight(kg)					
	FD/FG20		FD/FG25			Lowered	(1)Raised with Backrest			FD/FG20			FD/FG25		
	PNEUMATIC	UNIQUE(SE)	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	mm	deg	T3CZ	T4C	T3C	T3CZ	T4C	T3C
VFHM360	2000	2000	2500	2500	3600	1780	4630	780	6-6 *6-10	3425	3430	3320	3785	3795	3685
VFHM400	2000	2000	2500	2500	4000	1905	5030	905	6-6 *6-10	3455	3460	3350	3815	3825	3715
VFHM435	1900 *2000	1900 *2000	2200 *2400	2300 *2400	4350	2030	5380	1030	6-6 *6-10	3485	3490	3380	3845	3855	3745
VFHM480	1700 *1900	1800 *1900	1900 *2300	2200 *2300	4800	2180	5830	1180	6-6 *6-10	3515	3520	3410	3875	3885	3775
VFHM500	1500 *1800	1750 *1800	1600 *2250	2000 *2250	5000	2280	6030	1280	6-6 *6-10	3540	3545	3435	3900	3910	3800
VFHM540	1200 *1750	1650 *1750	1300 *2150	1700 *2150	5400	2405	6430	1405	3-6	3570	3575	3465	3930	3940	3830
VFHM550	1150 *1750	1600 *1750	1250 *2100	1650 *2100	5500	2445	6530	1445	3-6	3580	3585	3475	3940	3950	3840
VFHM600	900 *1650	1100 *1650	950 *1800	1100 *1800	6000	2630	7030	1630	3-6	3665	3670	3560	4025	4035	3925
VFHM650	*1500	* 1500	*1550	*1550	6500	2845	7530	1845	3-3	3825	3830	3720	4185	4195	4085
VFHM700	*1250	* 1250	*1250	*1250	7000	3065	8030	2065	3-3	3880	3885	3775	4240	4250	4140

NOTE :(1) For height without backrest: -455mm
(2) For free lift without backrest: +455mm
(3) Weight for without backrest: -20kg

NOTE :
Rated capacity with (*): Shows capacity with DD (double tires).
Each service weight of VM550/600 and VFHM650/700 represents the weight of truck equipped with DD (double tires).
Additional truck weight: +105kg for DD (double trires) and +120kg for SDD (special double tires).
Lifting speed with VFM mast:
With load: 440mm/s (T3CZ) or 480mm/s (T4C and T3C)
Without load: 500mm/s (T3CZ) or 520mm/s (T4C and T3C)
Lifting speed with VFHM mast:
With load: 460mm/s (T3CZ) or 500mm/s (T4C and T3C)
Without load: 520mm/s (T3CZ) or 540mm/s (T4C and T3C)
Lowering speed with VFM/VFHM mast: 400mm/s with load and 350mm/s without load.
Overall truck length with VFHM mast: +15mm longer than that of standard model with VM/VFM mast.

Wide View Mast VM

Mast Model	Rated Capacity 500mm load center(kg)		Max. Fork Height	Overall Mast Height		Tilting Angle F/B	Service Weight(kg)		
	FD/FG30			Lowered	Raised with Backrest		FD/FG30		
	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	deg	T3CZ	T4C	T3C
VM300	3000	3000	3000	2075	4250	6-12	4240	4245	4135
VM350	3000	3000	3500	2325	4750	6-12	4280	4285	4175
VM375	3000	3000	3750	2450	5000	6-6 *6-12	4300	4305	4195
VM400	3000	3000	4000	2625	5250	6-6 *6-12	4360	4365	4255
VM450	2800 *3000	3000	4500	2875	5750	6-6 *6-12	4400	4405	4295
VM500	2700 *2850	2850	5000	3125	6250	6-6	4445	4450	4340
VM550	*2400	*2400	5500	3425	6750	*3-6	4625	4630	4520
VM600	*2000	*2000	6000	3675	7250	*3-6	4665	4670	4560

Wide View Full Free 2-Stage Mast VFM

Mast Model	Rated Capacity 500mm load center(kg)		Max. Fork Height	Overall Mast Height		(2)Free lift with Backrest	Tilting Angle F/B	(3) Service Weight(kg)		
	FD/FG30			Lowered	(1)Raised with Backrest			FD/FG30		
	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	mm	deg	T3CZ	T4C	T3C
VFM250	3000	3000	2500	1825	3750	600	6-10	4240	4245	4135
VFM270	3000	3000	2700	1925	3950	700	6-10	4255	4260	4150
VFM275	3000	3000	2750	1950	4010	725	6-12	4260	4265	4155
VFM300	3000	3000	3000	2075	4250	850	6-12	4285	4290	4180
VFM330	3000	3000	3300	2225	4550	1000	6-12	4310	4315	4205
VFM350	3000	3000	3500	2325	4750	1100	6-12	4325	4330	4220
VFM375	3000	3000	3750	2450	5000	1225	6-6 *6-12	4350	4355	4245
VFM400	3000	3000	4000	2625	5250	1400	6-6 *6-12	4415	4420	4310
VFM450	2800 *3000	3000	4500	2875	5750	1650	6-6 *6-12	4455	4460	4350
VFM500	2700 *2850	2850	5000	3125	6250	1900	6-6	4500	4505	4395

NOTE :(1) For height without backrest: -520mm
(2) For free lift without backrest: +520mm
(3) Weight for without backrest: -30kg

Wide View Full Free 3-Stage Mast VFHM

Mast Model	Rated Capacity 500mm load center(kg)		Max. Fork Height	Overall Mast Height		(2)Free lift with Backrest	Tilting Angle F/B	(3) Service Weight(kg)		
	FD/FG30			Lowered	(1)Raised with Backrest			FD/FG30		
	PNEUMATIC	UNIQUE(SE)	mm	mm	mm	mm	deg	T3CZ	T4C	T3C
VFHM360	3000	3000	3600	1825	4860	600	6-6 *6-10	4385	4390	4280
VFHM400	3000	3000	4000	1950	5260	725	6-6 *6-10	4415	4420	4310
VFHM435	2900 *3000	2900 *3000	4350	2075	5610	850	6-6 *6-10	4450	4455	4345
VFHM480	2800 *2900	2800 *2900	4800	2225	6060	1000	6-6 *6-10	4485	4490	4380
VFHM500	2600 *2750	2750	5000	2325	6260	1100	6-6 *6-10	4510	4515	4405
VFHM540	1900 *2650	2500 *2650	5400	2450	6660	1225	3-6	4545	4550	4440
VFHM550	1900 *2600	2450 *2600	5500	2490	6760	1265	3-6	4555	4560	4450
VFHM600	1400 *2100	1850 *2100	6000	2675	7260	1450	3-6	4640	4645	4535
VFHM650	*1700	*1700	6500	2890	7760	1665	3-3	4810	4815	4705
VFHM700	*1350	*1350	7000	3110	8260	1885	3-3	4865	4870	4760

NOTE :(1) For height without backrest: -580mm
(2) For free lift without backrest: +580mm
(3) Weight for without backrest: -30kg

NOTE :
Rated capacity with (*): Shows capacity with DD (double tires).
Each service weight of VM550/600 and VFHM650/700 represents the weight of trucks equipped with DD (double tires).
Additional truck weight: +35kg for DD (double trires) and +150kg for SDD (special double tires).
Lifting speed with VFM mast:
With load: 400mm/s (T3CZ), 410mm/s (T4C) and 420mm/s (T3C)
Without load: 410mm/s (T3CZ) and 440mm/s (T4C and T3C)
Lifting speed with VFHM mast:
With load: 420mm/s (T3CZ and T4C) and 430mm/s (T3C)
Without load: 430mm/s (T3CZ), 450mm/s (T4C) and 550mm/s (T3C)
Lowering speed with VFM/VFHM mast: 400mm/s with load and 350mm/s without load.
Overall truck length with VFHM mast: +15mm longer than that of standard model with VM/VFM mast.

- UniCarriers Corporation retains the right to change these products and specifications without incurring any obligation relating to such changes.
- These products and specifications are subject to change without notice.
- Photos and illustrations may slightly differ from the actual trucks.
- Photos and illustrations may or may not include optional equipment and accessories.
- Features and specifications may vary depending on markets.
- Performance data and dimensions are nominal and subject to tolerances.
- Produced in ISO certified factory.

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