

# FR-VII

## SPECIFICATIONS



**TCM**

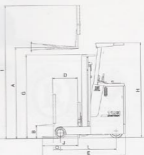
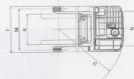
## STANDARD SPECIFICATIONS: Stand-up Rider Type - Electric Reach Trucks

Model		FR10-7	FR13-7H	FR13-7	FR13-7H	FR14-7	FR14-7H	FR15-7	FR15-7H	FR18-7	FR18-7H	
<b>■Performance</b>												
Max. load	(load center)	kg		1000		1250		1350 (500)		1500		1800
Max. fork height		mm		3000		4000		3000		4000		3000
Free lift		mm		A		B		410				415
Speed lifting	: with load	mm/s		300		340		330				310
	: without load	mm/s						570				
Tilt angle range	: forward / backward	deg						3 / 5				
Travel speed	: with load	km/h						9.5				
	: without load	km/h						10.5				
Min. turning radius (outside)		mm		C		1350		1490		1490		1560
Reach stroke		mm		D		405		555		555		880
<b>■Dimensions &amp; Weight</b>												
Overall length	: with forks	mm		E		2000		2000		2070		2070
		mm		F				1000				
Overall width		mm		G		1995		2495		1995		2495
	: Mast	mm		H				2290				
Overall height	: Head guard	mm		I		3620		4820		3820		4820
	: Max. height fork raised	mm		J		3620		4820		3820		4820
Fork size	: L x W x T	mm		K				920 x 100 x 35				920 x 100 x 38
Lateral fork adjustment (outside of forks)		mm		L		1065		1245		1245		1345
Wheelbase		mm		M		1065		975		880		975
Tread	: front	mm		N								1525
	: rear	mm		O								170
Fork Overhang (Centerline of front axle to front face of forks)		mm				170				165		170
Service weight (with STD. battery)		kg		1860		1970		2000		2080		2050
<b>■Electric Motor &amp; Controller &amp; Drive system</b>												
Battery	Voltage / Capacity (5 Hour Rating)	(STD.)		48V / 201AH						48V / 280AH		
	(Option)			48V / 225AH						48V / 370AH		
Electric motors	: drive motor	kw/90min						4.3				
	: hydraulic motor	kw/5min						6.8				
Controller type	: drive control							IGBT Inverter				
	: load handling control							IGBT Inverter				
Brake system								Disc / Electro-magnetic disc				
<b>■Tire &amp; Steering System</b>												
Number (X=driven)	: front / rear							2 / 1x + 2 (x=drive)				
	: front, load			255 x 114 rubber solid						255 x 114 urethane solid		
Size	: rear, drive					330 x 145 rubber solid						
	: rear, caster							178 x 73 rubber solid				

## STANDARD SPECIFICATIONS: Stand-up Rider Type - Electric Reach Trucks

Model		FR20-7	FR20-7H	FR25-7	FR25-7H	FR30-7	FR30-7H
<b>■Performance</b>							
Max. load	(load center)	kg		2000		2500	
		(mm)		[500]		3000	
Max. fork height		mm		A		3000	
Free lift		mm		B		410	
Speed lifting	: with load	mm/s		270		250	
	: without load	mm/s		480		400	
Tilt angle range	: forward / backward	deg				3 / 5	
Travel speed	: with load	km/h				9.5	
	: without load	km/h				11.5	
Min. turning radius (outside)		mm		C		1795	
Reach stroke		mm		D		650	
<b>■Dimensions &amp; Weight</b>							
Overall length	: with forks	mm		E		2200	
		mm		F		2225	
Overall width		mm		G		1200	
	: Mast	mm		H		2035	
	: Head guard	mm		I		2315	
Overall height	: Max. height fork raised	mm		J		3930	
		mm		K		4930	
Fork size	: L x W x T	mm		L		920 x 122 x 40	
Lateral fork adjustment (outside of forks)		mm		M		1530	
Wheelbase		mm		N		1700	
Tread	: front	mm		O		1065	
	: rear	mm		P		725	
Fork Overhang (Centerline of front axle to front face of forks)		mm		Q		165	
Service weight (with STD. battery)		kg		2740		2890	
		kg		2890		2980	
		kg		3000		3210	
		kg		3320			
<b>■Electric Motor &amp; Controller &amp; Drive system</b>							
Battery	Voltage / Capacity (5 Hour Rating)	(STD.)		48V / 320AH		48V / 390AH	
	(Option)			48V / 390AH		48V / 440AH	
Electric motors	: drive motor	kw/60min				5.0	
	: hydraulic motor	kw/10min				11.0	
Controller type	: drive control					IGBT Inverter	
	: load handling control					IGBT Inverter	
Brake system						Disc / Electro-magnetic disc	
<b>■Tire &amp; Steering System</b>							
Number (X=driven)	: front / rear					2 / 1x + 2 (x=drive)	
	: front, load			267 x 135 urethane solid			
Size	: rear, drive					380 x 165 rubber solid	
	: rear, caster					204 x 76 rubber solid	

## STANDARD DIMENSIONS



# MAX.LOAD CAPACITY WITH MAST TYPE AND SPECIFICATIONS

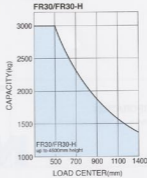
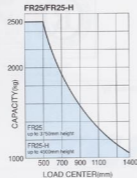
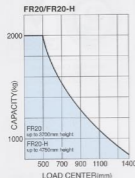
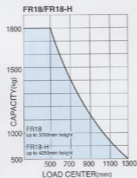
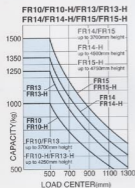
Mast Type	Mast Model	Max. Fork Height	Max. load Capacity (at 500mm Load Center)																	Overall Mast Height			
																				Lowered	Raised with Backrest (1)		
			FR10-7	FR10-7	FR10-7H	FR13-7H	FR14-7	FR15-7	FR14-7H	FR15-7H	FR18-7	FR18-7H	FR20-7	FR25-7	FR28-7H	FR25-7H	FR30-7	FR30-7H	FR10-7 FR13-7	FR10-7H FR13-7H	FR10-7 FR13-7	FR16-7H FR13-7H	
mm	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	mm	mm	mm	mm			
Wide View Mast 2-stage Mast(VM)	VM270	2700	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	3000	-	1845	-	3545	-	
	VM300	3000	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	3000	-	1995	-	3845	-	
	VM330	3300	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	3000	-	2145	-	4145	-	
	VM350	3500	1000	1250	1000	1250	1350	1500	1350	1500	1800	1800	2000	2500	2900	2500	3000	3000	2245	2245	4345	4345	
	VM375	3750	950	1150	1000	1250	1250	1400	1350	1500	1700	1800	1950	2500	2000	2500	3000	3000	2370	2370	4595	4595	
	VM400	4000	950	1150	1000	1250	1250	1400	1350	1500	1700	1800	1950	2400	2000	2500	3000	3000	2495	2495	4845	4845	
Wide View Full-Free 2-stage Mast(VFM)	VM450	4500	850	1000	900	1050	1250	1350	1500	1600	1700	1800	2350	2000	2500	2850	2850	2795	2795	5345	5345		
	VM500	5000	700	800	800	900	1000	1200	1150	1300	1450	1500	1750	2200	1950	2400	2700	2700	3045	3045	5845	5845	
	VFM270	2700	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	-	-	1845	-	3545	-	
	VFM300	3000	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	-	-	1995	-	3845	-	
	VFM330	3300	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	-	-	-	-	2145	-	4145	-	
	VFM350	3500	1000	1250	-	-	1350	1500	-	-	1800	-	2000	2500	2000	-	-	-	2245	-	4345	-	
Wide View Full-Free 3-stage Mast(VFHM)	VFM375	3750	1000	1250	1000	1250	1250	1350	1500	1350	1500	1800	1800	2000	2500	2000	-	-	2370	2370	4595	4595	
	VFM400	4000	-	-	1000	1250	-	-	1350	1500	-	1800	-	-	2000	2500	-	-	-	1870	-	4845	
	VFHM400	4000	-	-	1000	1250	-	-	1350	1500	-	1800	-	-	2000	2500	-	-	-	1985	-	5195	
	VFHM435	4350	-	-	1000	1100	-	-	1300	1500	-	1700	-	-	2000	2500	-	-	-	2145	-	5645	
	VFHM480	4800	-	-	900	950	-	-	1250	1400	-	1600	-	-	1950	2450	-	-	-	2245	-	5845	
	VFHM500	5000	-	-	900	950	-	-	1150	1400	-	1500	-	-	1900	2350	-	-	-	2245	-	5845	
Wide View Full-Free 3-stage Mast(VFHM)	VFHM550	5500	-	-	800	850	-	-	1100	1200	-	1300	-	-	1800	2250	-	-	-	2410	-	6345	
	VFHM600	6000	-	-	500	600	-	-	650	650	-	700	-	-	1700	2100	-	-	-	2595	-	6845	
	VFHM650	6500	-	-	-	-	-	-	-	-	-	-	-	-	1000	1200	-	-	-	-	-	-	

NOTE: (1) for Height without Backrest  
 -225mm (VM,VFM,VFHM FR10-18H)  
 -205mm (VM,VFM FR20-25)  
 -305mm (VFHM FR20-25)  
 -160mm (VM FR30-30H)

(2) for Free Lift without Backrest  
 +45mm (VFM FR10-18H)  
 +180mm (VFHM FR10-18H)  
 +120mm (VFM FR20-25)  
 +290mm (VFHM FR20-25)

## LOAD CHART

### Standard models



Free Lift with Backrest (2)		Overall Mast Height						Free Lift with Backrest (2)		Overall Mast Height								Free Lift with Backrest (2)			
		Lowered		Raised with Backrest (1)		Lowered				Raised with Backrest (1)											
FR10-7 FR13-7	FR16-7 FR13-7H	FR14-7 FR15-7 FR18-7H	FR14-7H FR15-7H FR18-7H	FR14-7 FR15-7 FR18-7	FR14-7H FR15-7H FR18-7H	FR14-7 FR15-7 FR18-7	FR14-7H FR15-7H FR18-7H	FR20-7 FR25-7	FR20-7H FR25-7H	FR30-7	FR30-7H	FR20-7 FR25-7	FR20-7H FR25-7H	FR30-7	FR30-7H	FR20-7 FR25-7	FR20-7H FR25-7H	FR30-7	FR30-7H		
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
410	410	1845	-	3545	-	410	415	1885	-	1885	-	3630	-	3630	-	410	410	415	-		
410	410	1995	-	3845	-	410	415	2035	-	2035	-	3930	-	3930	-	410	410	415	-		
410	410	2145	-	4145	-	410	415	2185	-	2185	-	4230	-	4230	-	410	410	415	-		
410	410	2245	2245	4345	4345	410	415	2285	2285	2285	2285	4430	4430	4430	4430	410	410	415	415		
410	410	2370	2370	4595	4595	410	415	2410	2410	2410	2410	4680	4680	4680	4680	410	410	415	415		
410	410	2495	2495	4845	4845	410	415	2535	2535	2535	2535	4930	4930	4930	4930	410	410	415	415		
410	410	2795	2795	5345	5345	410	415	2835	2835	2835	2835	5430	5430	5430	5430	410	410	415	415		
410	410	3045	3045	5845	5845	410	415	3085	3085	3085	3085	5930	5930	5930	5930	410	410	415	415		
1025	-	1845	-	3545	-	1025	-	1885	-	1885	-	3630	-	3630	-	985	-	-	-		
1175	-	1995	-	3845	-	1175	-	2035	-	2035	-	3930	-	3930	-	1135	-	-	-		
1325	-	2145	-	4145	-	1325	-	2185	-	2185	-	4230	-	4230	-	1285	-	-	-		
1425	-	2245	-	4345	-	1425	-	2285	2285	2285	2285	4430	4430	4430	4430	1385	1385	-	-		
1550	1550	2370	2370	4595	4595	1550	1550	2410	2410	2410	2410	4680	4680	4680	4680	1510	1510	-	-		
-	1675	-	2495	-	4845	-	1675	-	2535	-	2535	-	4930	-	4930	-	1635	-	-		
-	1050	-	1870	-	4845	-	1050	-	1910	-	1910	-	4930	-	4930	-	1010	-	-		
-	1175	-	1995	-	5195	-	1175	-	2035	-	2035	-	5280	-	5280	-	1135	-	-		
-	1325	-	2145	-	5645	-	1325	-	2185	-	2185	-	5730	-	5730	-	1285	-	-		
-	1425	-	2245	-	5845	-	1425	-	2285	-	2285	-	5930	-	5930	-	1385	-	-		
-	1590	-	2410	-	6345	-	1590	-	2450	-	2450	-	6430	-	6430	-	1550	-	-		
-	1775	-	2595	-	6845	-	1775	-	2635	-	2635	-	6930	-	6930	-	1735	-	-		
-	-	-	-	-	-	-	-	-	2850	-	2850	-	7430	-	7430	-	1950	-	-		

## Right angle stacking aisle

Model	Pallet Type: Width(w) Depth(L) mm											
	W		L		W		L		W		L	
	1000	800	1100	800	1000	1000	1100	1000	1200	1000	1100	1100
FR10-7	2110		2140		2260		2290		2320		2380	
FR10-7H	2140		2180		2280		2320		2350		2390	
FR13-7	2140		2180		2280		2320		2350		2390	
FR13-7H	2140		2180		2280		2320		2350		2390	
FR14-7	2200		2240		2330		2370		2400		2440	
FR14-7H	2200		2240		2330		2370		2400		2440	
FR15-7	2200		2240		2330		2370		2400		2440	
FR15-7H	2310		2360		2420		2460		2500		2530	
FR18-7	2310		2360		2420		2460		2500		2530	
FR18-7H	2310		2360		2420		2460		2500		2530	
FR20-7	2390		2430		2520		2550		2590		2630	
FR20-7H	2500		2550		2590		2630		2670		2690	
FR25-7	2500		2550		2590		2630		2670		2690	
FR25-7H	2500		2550		2590		2630		2670		2690	
FR30-7	2640		2680		2750		2790		2830		2860	
FR30-7H	2640		2680		2750		2790		2830		2860	

## Inner dimension of battery case

Model	Battery weight range (kg)	Case inner size (L) x (W) x (H) mm	Case weight (kg)
FR10-7	330~410	258.6 x 949.6 x 565.5	40
FR10-7H	↑	↑	↑
FR13-7	↑	↑	↑
FR13-7H	↑	↑	↑
FR14-7	440~625	368.6 x 949.6 x 565.5	46
FR14-7H	↑	↑	↑
FR15-7	↑	↑	↑
FR15-7H	↑	↑	↑
FR18-7	↑	↑	↑
FR18-7H	↑	↑	↑
FR20-7	525~750	386.0 X 1116.0 X 565.5	73
FR20-7H	↑	↑	↑
FR25-7	↑	↑	↑
FR25-7H	↑	↑	↑
FR30-7	600~750	386.0 X 1116.0 X 565.5	73
FR30-7H	↑	↑	↑

## Configuration for export specification

Model	FR10-7	FR13-7	FR14-7	FR15-7	FR18-7	FR20-7	FR25-7	FR30-7
	FR10-7H	FR13-7H	FR14-7H	FR15-7H	FR18-7H	FR20-7H	FR25-7H	FR30-7H
Arm rest with assist grip	○	○	○	○	○	○	○	○
Auto-lock suspension system	○	○	○	○	○	○	○	○
Automatic anti-slip control/drive wheel	○	○	○	○	○	○	○	○
Auto power off	○	○	○	○	○	○	○	○
Auto traction control	○	○	○	○	○	○	○	○
Back-up buzzer	○	○	○	○	○	○	○	○
Battery								
201Ah/5HR	△	△						
225Ah/5HR	△	△						
280Ah/5HR			△	△	△			
312Ah/5HR			△	△	△			
320Ah/5HR						△	△	
370Ah/5HR			△	△	△			
390Ah/5HR						△	△	△
440Ah/5HR						△	△	△
Built-in charger(Truck-mounted)	△	△	△	△	△	△	△	△
Central greasing system	○	○	○	○	○	○	○	○
Chime(Buzzer)/forward traveling	△	△	△	△	△	△	△	△
Display								
Battery fuel	○	○	○	○	○	○	○	○
Clock with calendar	○	○	○	○	○	○	○	○
Hourmeter	○	○	○	○	○	○	○	○
Odometer	○	○	○	○	○	○	○	○
Safety monitor	○	○	○	○	○	○	○	○
Speedometer	○	○	○	○	○	○	○	○
Documents clip	○	○	○	○	○	○	○	○
Electric power steering(EPS)	○	○	○	○	○	○	○	○
Electro-magnetic front wheel brake	○	○	○	○	○	○	○	○
Head light	○	○	○	○	○	○	○	○
Neutral safety system	○	○	○	○	○	○	○	○
Operator tool kit	○	○	○	○	○	○	○	○
Overhead guard	○	○	○	○	○	○	○	○
Rear working light	△	△	△	△	△	△	△	△
Regenerative braking								
Accel-off brake	○	○	○	○	○	○	○	○
Brake	○	○	○	○	○	○	○	○
Down-slope travel	○	○	○	○	○	○	○	○
Switch-back	○	○	○	○	○	○	○	○
Shock-less cylinder (for VM)	○	○	○	○	○	○	○	○
Small-dia stg wheel	○	○	○	○	○	○	○	○
Spot light	△	△	△	△	△	△	△	△
Stational charger(with MICON)	△	△	△	△	△	△	△	△
Stop & backup lamp	△	△	△	△	△	△	△	△
Turn signal lights(with self-cancelling)	○	○	○	○	○	○	○	○
Waist & hip supporter	○	○	○	○	○	○	○	○

○ : STD △ : Optional

### Other optionals:

Equipment & Accessories	Loading & Attachment
Battery change stand	Alternative fork lengths
Central electrolyte re-fill system	Fork extensions(Sleeves)
C-lug drive Tire	Load grabs
Cold storage package(-35°C)	Rotating clamps
Fire extinguisher	Side shifter
Fishery industry package	Wide-finger bar(for VM)
Headlight guard	Wide view full free 2stage mast(VFM)
Mast guard	Wide view full free 3stage mast(VFHM)
Non-marking Tire	
Overhead guard canvas	
Polyurethane Tire	Other on request
Rotating warning light(Red, Yellow)	
Side view mirrors	

Other on request

### NOTE: These TCM lifttrucks meet the following major standards:

JIS D6001	Forklift trucks
JIS D6011	Stability & safety test
JIS 6081	Overhead guard
ISO 6055	Overhead guard

All specifications contained in this catalogue are subject to change without notice.  
Some items and components in photos may be optional.  
Please consult your TCM representative for details.