

4 Wheel Electric Forklift



Conforms to EN ISO3691-1
EN1175
EN16307-1
Based on Directive 2006/42/EC
2006/95/EC

Model:
FB16R
FB20R/20R-IILi
FB25R/25R-IILi
FB30R/30R-IILi
FB35R/35R-IILi



Advantages:

SAFETY AND STABILITY

- The most popular H type driving axle optimizes the structure layout and improves the efficiency.
- High power and large torque AC driving motor, large diameter body to export larger torque, heat radiating groove reserved for better heat exchange in case of extra-long-time use.
- Multifunctional display with using time, fault code, battery status, forklift running information.
- AC driving motor without brush, free of maintenance; low electric current, silent driving.
- Low gravity center thanks to relocated battery, greatly reinforcing steering stability.
- Steering circuit preference, to ensure safety in every turn when steering and lifting in the same time, and to save energy.
- Dual-controller design, one driving controller, the other controls steering and lifting.
- Metal housing for better protection.
- Full LED light.

SERVICE ABILITY

- Easy maintained controller and steering potentiometer.
- Brushless lifting and driving motor, reduced cost of ownership; external encoder, easy to replace and service.
- Over discharge protecting system: while the battery discharges less than 20%, the instrument warning light will turn on.
- Braking oil cup installed on the instrument panel, convenient to check and add braking oil.

ERGONOMICS

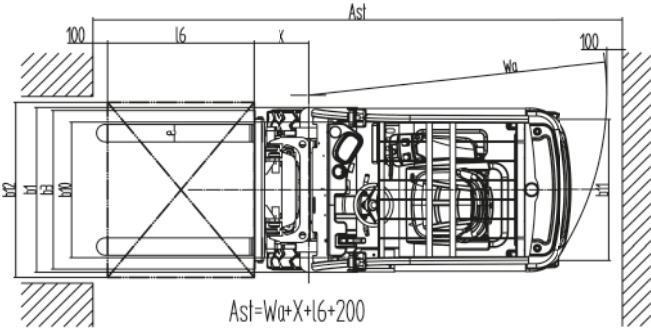
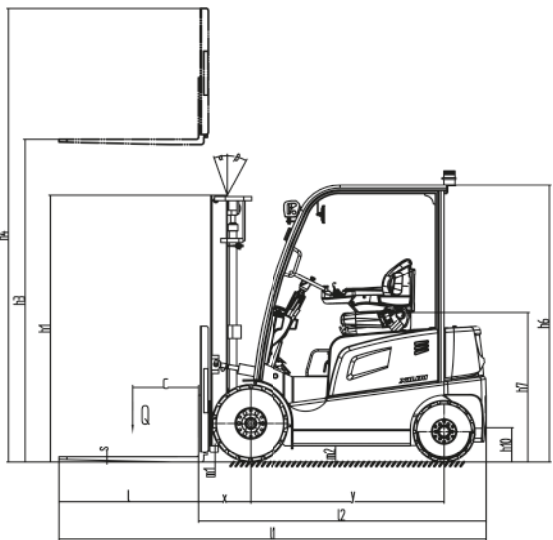
- Optimized structure creates a large and comfortable operating room.
- Adjustable steering wheel column, the driver can adjust the position according to his need.
- Integrated light switch and steering wheel.
- Clear and wide view mast with good visibility.
- Intelligent mast collapse buffering.

OPTIONAL

- Side-way battery box
- Electromagnetic valve
- Shock-absorbing chair, with power disconnect function
- Dual-front-wheels
- Adjustable lifting motor speed system
- Cold storage application
- Lithium battery

	1.2	Model		FB16R	FB20R	FB25R	FB30R	FB35R
General Information	1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas		Electric	Electric	Electric	Electric	Electric
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker		Seated	Seated	Seated	Seated	Seated
	1.5	Rated capacity/rated load	Q (kg)	1600	2000	2500	3000	3500
	1.6	Load centre distance	c (mm)	500	500	500	500	500
	1.8	Load distance, centre of drive axle to fork	x (mm)	395	395	445	460	460
Weight	1.9	Wheelbase	y (mm)	1360	1480	1480	1640	1640
	2.1	Service weight	kg	3100	3500	4150	4800	5200
	2.2	Axle loading, laden front/rear	kg	3870/730	4815/685	5857/793	6950/850	7870/830
Tyres/Chassis	2.3	Axle loading, unladen front/rear	kg	1400/1700	1635/1865	1859/2291	2200/2600	2300/2900
	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		Pneumatic/solid	Pneumatic/solid	Pneumatic/solid	Pneumatic/solid	solid rubber
	3.2	Tyre size, front		6.50-10	6.50-10	23X9-10	23X9-10	23X10-12
	3.3	Tyre size, rear		5.00-8	5.00-8	18X7-8	18X7-8	200/50-10
	3.5	Wheels, number front/rear (× = driven wheels)		2x/2	2x/2	2x/2	2x/2	2x/2
Dimensions	3.6	Tread, front	b10 (mm)	930	930	970	1040	1040
	3.7	Tread, rear	b11 (mm)	920	920	970	950	950
	4.1	Tilt of mast/fork carriage forward/backward	a/b (°)	5/10	5/10	5/10	5/10	5/10
	4.2	Height, mast lowered	h1 (mm)	2015	2015	2050	2100	2100
	4.4	Lift	h3 (mm)	3000-6500	3000-6500	3000-6500	3000-6500	3000-6500
	4.5	Height, mast extended	h4 (mm)	4050	4050	4050	4270	4270
	4.7	Height of overhead guard (cabin)	h6 (mm)	2100	2100	2100	2160	2160
	4.8	Seat height relating to SIP/stand height	h7 (mm)	1040	1040	1040	1070	1070
	4.12	Coupling height	h10 (mm)	260	260	260	260	260
	4.19	Overall length	l1 (mm)	3000	3270	3350	3550	3620
	4.20	Length to face of forks	l2 (mm)	2080	2200	2280	2470	2540
	4.21	Overall width	b1/b2 (mm)	1130	1130	1200	1302	1302
	4.22	Fork dimensions DIN ISO 2331	s / e / l (mm)	40/100/1070	40/120/1070	40/120/1070	45/125/1070	50/125/1070
	4.24	Fork-carriage width	b3 (mm)	1088	1088	1160	1220	1220
	4.31	Ground clearance, laden, below mast	m1 (mm)	110	110	110	115	115
Performance Data	4.32	Ground clearance, centre of wheelbase	m2 (mm)	115	115	115	120	120
	4.34.1	Aisle width for pallets 1000 × 1200 crossways	Ast (mm)	3500	3600	3700	3900	3960
	4.34.2	Aisle width for pallets 800 × 1200 lengthways	Ast (mm)	3700	3800	3900	4100	4160
	4.35	Turning radius	Wa (mm)	1980	2080	2180	2280	2340
	5.1	Travel speed, laden/unladen	km/h	12/13	12/13	12/13	12/13	12/13
Motors	5.2	Lift speed, laden/unladen	m/s	0.26/0.35	0.28/0.32	0.26/0.3	0.25/0.35	0.21/0.35
	5.3	Lowering speed, laden/unladen	m/s	0.36/0.42	0.36/0.42	0.36/0.42	0.4/0.40	0.4/0.40
	5.8	Max.Gradeability, laden/unladen	%	15/20	15/20	13/14	13/14	13/14
	5.10	Service brake		hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
Additional Data	6.1	Drive motor rating S2 60 min	kW	7(AC)	8(AC)	11(AC)	14(AC)	14(AC)
	6.2	Lift motor rating at S3 15%	kW	10.6(AC)	10.6(AC)	12(AC)	13.5(AC)	13.5(AC)
	6.4	Battery voltage/nominal capacity K5	(V)/(Ah)	48/375(420,480)	48/450(500,560,630)	48/500(560,630)	80/400(450,500)	80/400(450,500)
	6.5	Battery weight	kg	600/650/720	680/760/820/1055	760/820/1055	1100/1270/1383	1100/1270/1383
Additional Data	10.7	Sound pressure level at the driver's seat	dB (A)	68	68	68	68	68

Remark: Electric controller, Chinese controller as standard, INMOTION and CURTIS as option.

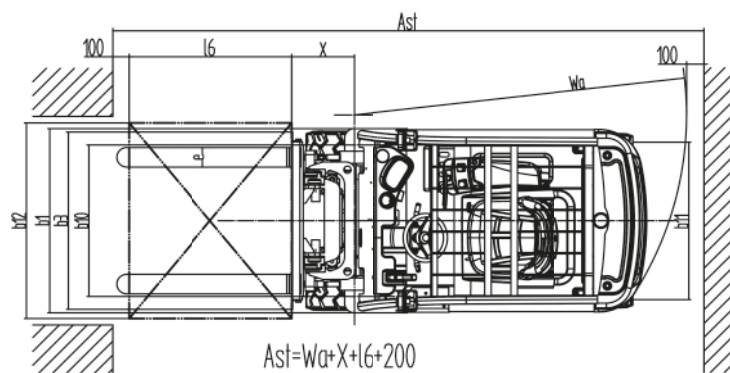
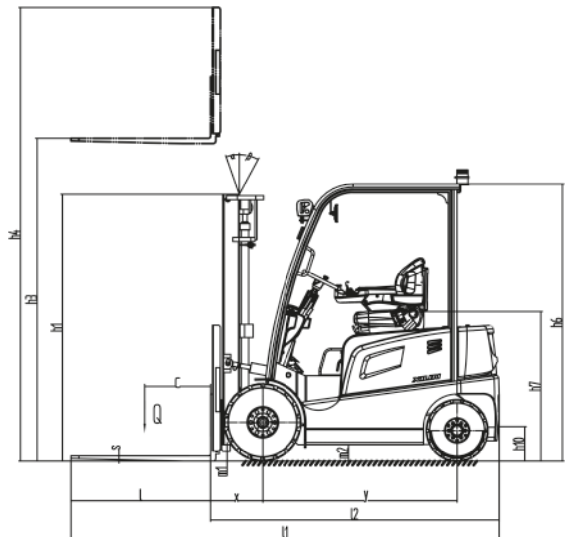


4 Wheel Electric Forklift



							1KG=2.205LB	1INCH=25.40MM
Characteristics	1.2	Manufacturer's type designation		FB20R- II Li	FB25R- II Li	FB30R- II Li	FB35R- II Li	
	1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas		Electric	Electric	Electric	Electric	
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker		Seated	Seated	Seated	Seated	
	1.5	Rated capacity/rated load	Q (kg)	2000	2500	3000	3500	
	1.6	Load centre distance	c (mm)	500	500	500	500	
	1.8	Load distance, centre of drive axle to fork	x (mm)	395	445	460	460	
	1.9	Wheelbase	y (mm)	1480	1480	1640	1640	
Weight	2.1	Service weight	kg	3050	3710	4250	4600	
	2.2	Axle loading, laden front/rear	kg	4470/580	5650/560	6450/750	7450/800	
	2.3	Axle loading, unladen front/rear	kg	1400/1650	1560/2150	1750/2500	1750/2850	
Wheel chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		Pneumatic/solid	Pneumatic/solid	Pneumatic/solid	Pneumatic/solid	
	3.2	Tyre size, front		6.50-10	23X9-10	23X9-10	23X10-12	
	3.3	Tyre size, rear		5.00-8	18X7-8	18X7-8	200/50-10	
	3.5	Wheels, number front/rear (× = driven wheels)		2x/2	2x/2	2x/2	2x/2	
	3.6	Tread, front	b10 (mm)	930	970	1040	1040	
	3.7	Tread, rear	b11 (mm)	920	970	950	950	
	Dimensions	4.1	Tilt of mast/fork carriage forward/backward	a/b (°)	5/10	5/10	5/10	5/10
4.2		Height, mast lowered	h1 (mm)	2015	2050	2100	2100	
4.4		Lift	h3 (mm)	3000-6500	3000-6500	3000-6500	3000-6500	
4.5		Height, mast extended	h4 (mm)	4050	4050	4200	4200	
4.7		Height of overhead guard (cabin)	h6 (mm)	2100	2100	2160	2160	
4.8		Seat height relating to SIP/stand height	h7 (mm)	1040	1040	1070	1070	
4.12		Coupling height	h10 (mm)	260	260	260	260	
4.19		Overall length	l1 (mm)	3270	3350	3620	3680	
4.20		Length to face of forks	l2 (mm)	2200	2280	2540	2600	
4.21		Overall width	b1/b2 (mm)	1130	1200	1302	1302	
4.22		Fork dimensions DIN ISO 2331	s / e / l (mm)	40/120/1070	40/120/1070	45/125/1070	50/125/1070	
4.24		Fork-carriage width	b3 (mm)	1088	1160	1100	1100	
4.31		Ground clearance, laden, below mast	m1 (mm)	110	110	115	115	
4.32		Ground clearance, centre of wheelbase	m2 (mm)	115	110	120	120	
4.34.1		Aisle width for pallets 1000 × 1200 crossways	Ast (mm)	3600	3700	3960	4020	
4.34.2		Aisle width for pallets 800 × 1200 lengthways	Ast (mm)	3800	3900	4160	4220	
4.35		Turning radius	Wa (mm)	2080	2180	2340	2400	
Performance Data	5.1	Travel speed, laden/unladen	km/h	11/12	12/13	12/13	12/13	
	5.2	Lift speed, laden/unladen	m/s	0.26/0.35	0.26/0.3	0.25/0.35	0.21/0.35	
	5.3	Lowering speed, laden/unladen	m/s	0.36/0.42	0.36/0.42	0.4/0.40	0.4/0.40	
	5.8	Max.Gradeability, laden/unladen	%	15/20	13/14	13/14	13/14	
	5.10	Service brake		Hydraulic	Hydraulic	Hydraulic	Hydraulic	
Motors	6.1	Drive motor rating S2 60 min	kW	7.5(AC)	11(AC)	14(AC)	14(AC)	
	6.2	Lift motor rating at S3 15%	kW	6(AC)	12(AC)	13.5(AC)	13.5(AC)	
	6.3			Lithium	Lithium	Lithium	Lithium	
	6.4	Battery voltage/nominal capacity K5	(V)/(Ah) or kWh	48/270(300,350,410,460)	48/300(270,350,410,460)	80/150(205,230,280,300,350,410,460)	80/205(230,280,300,350,410,460)	
	6.5	Battery weight	kg	130	130	150	150	
Additional Data	10.7	Sound pressure level at the driver's seat	dB (A)	68	68	68	68	

Remark: Electric controller, Chinese controller as standard, INMOTION and CURTIS as option.



R Series Electric Counterbalance Forklift

Options:

Quad-mast with perfect mast
lowered height



Blue light



Solid white tires



Joystick operation with electro-magnetic valv



Operator Presence Switch

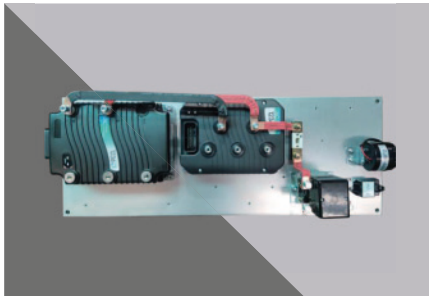
■ Cold-storage application ■ Cabin



4 Wheel Electric Forklift



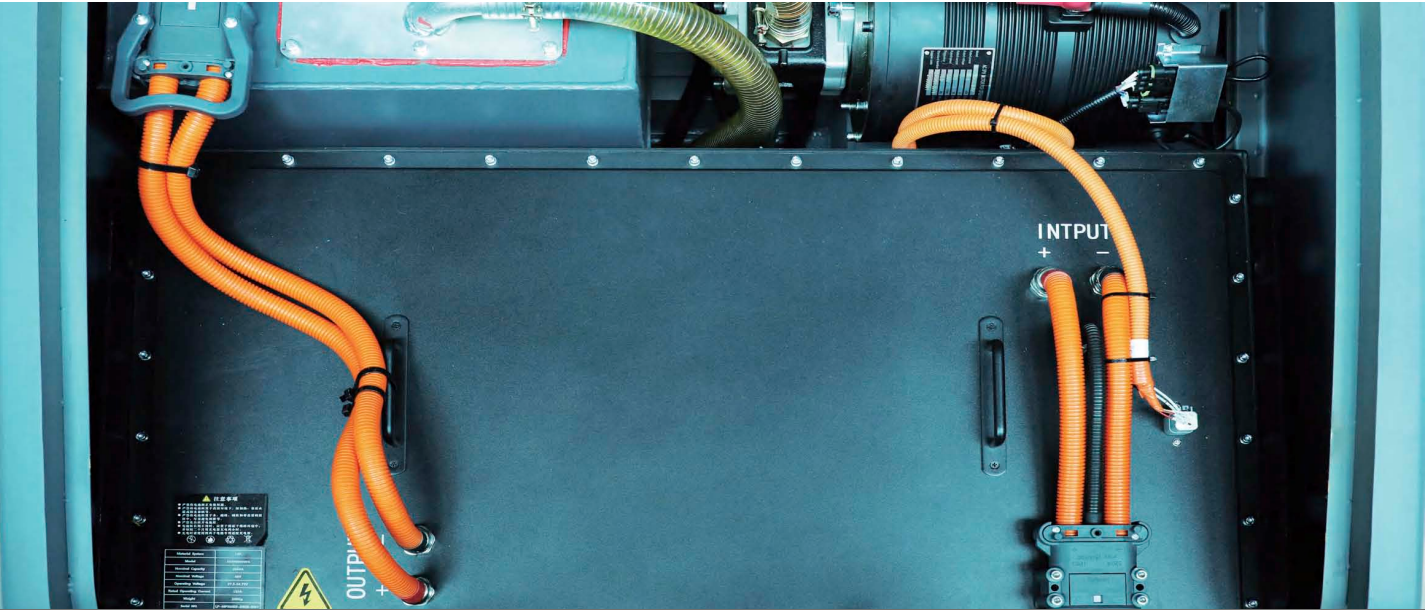
Side- way battery



CURTIS controller



INMOTION controller



■ Different lithium-ion battery capacity meets different working conditions and applications



LITHIUM-ION vs LEAD-ACID			
VOLTAGE	3.2 V	2V	
ENERGY RATIO	>120W-h/kg	30-40W-h/kg	
LIFESPAN	>2000 to 2500 times, capacity >80%, longer service lifespan	800 to 1500 times, capacity max 70%, shorter service lifespan	
BATTERY CAPACITY	Larger battery capacity	Limited by the size	
SIZE - WEIGHT	Size 2/3, Weight 1/3 of Lead-Acid Battery	Large Battery Size & Weight	
MEMORY CAPACITY	NO, Opportunity Charging	YES, Fully charged & discharged	
CHARGING PLUG	Electric Vehicle national standard charging head	REMA power plug	
CHARGE	Fast charging, 0.5C-2C Charging time 2-4hrs	Charge current 0.1C-0.15C Charging time 8-12hrs	
DISCHARGE	Small voltage variation Good power stability	Battery voltage continue to decrease during usage	
SELF-DISCHARGE RATE	Monthly self-discharge rate <3%	<15-30%	
AMBIENT TEMPERATURE	Charging: 0-45°C Discharging: -20-60 °C	Charging: 0-45°C Discharging: -20-60 °C	
CONTROL SYSTEM	Current, Voltage, Temperature, SOC can be monitored with BMS	No	
SAFETY	YES	YES	
FORKLIFT USAGE	Getting popular	Very popular	
MAINTENANCE	Maintenance free, but high cost for cell repair/replacement	Higher maintenance, but relatively cheaper in repair & replacement	
COST	Higher cost (price continue decrease in recent years)	Low cost but price continue increase in recent years	
ENVIRONMENT IMPACT	No pollution & emission in production, degradable & recyclable in usage	Danger of lead pollution, release acid mist	

FB16R/FB20R/FB20R-ILi Mast Specification

Type	Lifting Height(H3)	Lowered Height(H1)	Mast Extended Height(H4)		Free Lift Height(H2)		Mast Tilt Degree	Capacity	
			With backrest	Without backrest	With backrest	Without backrest		c=500mm without sideshift	c=500mm without sideshift
	mm	mm	mm	mm	mm	mm		Kg(FB16R)	Kg(FB20R)
2-stage mast wide view	2000	1510	3000	2570	0	0	5/10	1600	2000
	2500	1720	3500	3070	0	0	5/10	1600	2000
	2700	1695	3700	3270	0	0	5/10	1600	2000
	3000	2010	4000	3570	0	0	5/10	1600	2000
	3300	2160	4300	3870	0	0	5/10	1600	2000
	3500	2260	4500	4070	0	0	5/10	1600	2000
	3700	2360	4700	4270	0	0	5/10	1550	1950
	4000	2510	5000	4570	0	0	5/10	1500	1900
	4500	2760	5500	5070	0	0	5/6	1300	1650
	4800	2910	5800	5370	0	0	5/6	1150	1550
2 stage mast with full free lifting	5000	3010	6000	5570	0	0	5/6	1050	1450
	2000	1510	3000	2570	510	940	5/10	1600	2000
	2500	1850	3500	3070	850	1280	5/10	1600	2000
	3000	2100	4000	3570	1100	1530	5/10	1600	2000
	3300	2250	4300	3870	1250	1680	5/10	1600	2000
	3500	2400	4500	4070	1400	1830	5/10	1600	2000
	3700	2500	4700	4270	1500	1930	5/10	1550	1950
3 stage mast with full free lifting	4000	2650	5000	4570	1650	2080	5/10	1500	1900
	4000	1900	5000	4570	900	1330	5/6	1500	1900
	4500	2110	5500	5070	1110	1540	5/6	1300	1650
	4800	2210	5800	5370	1210	1640	5/6	1150	1550
	5000	2270	6000	5570	1270	1700	5/6	1050	1450
	5600	2470	6600	6170	1470	1900	5/6	700	1050
	6000	2610	7000	6570	1610	2040	5/6	550	800
	6200	2670	7200	6770	1670	2100	5/6	450	600
	6500	2770	7500	7070	1770	2200	5/6	300	550
	7000	2940	8000	7570	1940	2370	5/6	100	350
Subtract 100kg with integral sideshift and 200kg with normal sideshift									

FB25R/FB25R-ILi Mast Specification

Type	Lifting Height(H3)	Lowered Height(H1)	Mast Extended Height(H4)		Free Lift Height(H2)		Mast Tilt Degree	Capacity
			With backrest	Without backrest	With backrest	Without backrest		c=500mm without sideshift
	mm	mm	mm	mm	mm	mm	a / b (°)	Kg
2-stage mast wide view	2000	1550	3000	2505	0	0	5/10	2500
	2500	1800	3500	3005	0	0	5/10	2500
	2700	1900	3700	3205	0	0	5/10	2500
	3000	2050	4000	3505	0	0	5/10	2500
	3300	2200	4300	3805	0	0	5/10	2500
	3500	2300	4500	4005	0	0	5/10	2500
	3700	2400	4700	4205	0	0	5/10	2400
	4000	2600	5000	4505	0	0	5/10	2300
	4500	2800	5500	5005	0	0	5/6	1950
	4800	2950	5800	5305	0	0	5/6	1750
	5000	3050	6000	5505	0	0	5/6	1650
	5500	3300	6500	6005	0	0	5/6	1200
	6000	3550	7000	6505	0	0	5/6	850
2 stage mast with full free lifting	2000	1660	3000	2616	660	1040	5/10	2500
	2500	1910	3500	3116	910	1290	5/10	2500
	3000	2160	4000	3616	1160	1540	5/10	2500
	3300	2310	4300	3916	1310	1690	5/10	2500
	3500	2460	4500	4216	1460	1744	5/10	2500
	3700	2510	4700	4316	1510	1890	5/10	2400
	4000	2660	5000	4616	1660	2050	5/10	2300
3 stage mast with full free lifting	4000	1990	5000	4663	990	1370	5/10	2300
	4500	2160	5500	5170	1160	1590	5/6	1950
	4800	2240	5800	5410	1240	1670	5/6	1750
	5000	2310	6000	5620	1310	1744	5/6	1650
	5600	2525	6600	6265	1525	1880	5/6	1200
	6000	2710	7000	6720	1710	2050	5/6	850
	6200	2777	7200	6921	1777	2116	5/6	800
	6500	2880	7500	7230	1880	2190	5/6	700
	7000	3090	8000	7760	2090	2376	5/6	350
Subtract 100kg with integral sideshift and 200kg with normal sideshift								

Forklift Mast

FB30R/FB35R/FB30R-II Li/FB35R-II Li Mast Specification

Type	Lifting Height(H3)	Lowered Height(H1)	Mast Extended Height(H4)		Free Lift Height(H2)		Mast Tilt Degree	Capacity	
			With backrest	Without backrest	With backrest	Without backrest	Forward/Backward	c=500mm without sideshift	c=500mm without sideshift
	mm	mm	mm	mm	mm	mm	a / b (°)	Kg(FB30R/FB30R-II L)	Kg(FB35R/FB35R-II L)
2-stage mast wide view	2000	1575	3175	2560	140	140	5/10	3000	3500
	2500	1825	3675	3060	140	140	5/10	3000	3500
	2700	1925	3875	3260	140	140	5/10	3000	3500
	3000	2075	4175	3560	140	140	5/10	3000	3500
	3300	2225	4475	3860	140	140	5/10	3000	3500
	3500	2325	4675	4060	140	140	5/10	3000	3500
	3700	2425	4875	4260	140	140	5/10	2950	3400
	4000	2580	5175	4560	140	140	5/10	2850	3250
	4500	2825	5675	5060	140	140	5/6	2450	2750
	4800	2975	5975	5360	140	140	5/6	2300	2500
	5000	3075	6175	5560	140	140	5/6	2150	2350
	5500	3325	6675	6060	140	140	5/6	1700	1850
2 stage mast with full free lifting	6000	3575	7175	6560	140	140	5/6	1250	1350
	2000	1575	3225	2610	350	955	5/10	3000	3500
	2500	1825	3725	3110	600	1205	5/10	3000	3500
	3000	2075	4225	3610	850	1455	5/10	3000	3500
	3300	2225	4525	3910	1000	1605	5/10	3000	3500
	3500	2375	4725	4110	1150	1755	5/10	3000	3500
	3700	2475	4925	4310	1250	1855	5/10	2900	3400
3 stage mast with full free lifting	4000	2644	5225	4610	1419	2024	5/10	2850	3250
	4000	2010	5225	4690	785	1365	5/10	2850	3250
	4500	2175	5725	5185	950	1545	5/6	2450	2750
	4800	2245	6025	5455	1020	1645	5/6	2300	2500
	5000	2325	6225	5635	1100	1749	5/6	2150	2350
	5500	2440	6725	6080	1215	1885	5/6	1700	1850
	6000	2680	7225	6690	1455	2055	5/6	1250	1350
	6200	2770	7425	6890	1545	2125	5/6	1100	1200
	6500	2870	7725	7200	1645	2225	5/6	950	1050
	7000	3144	8225	7942	1919	2255	5/6	450	550

Subtract 100kg with integral sideshift and 200kg with normal sideshift

Lithium Battery Voltage/Rated capacity(V/Ah)K5

Model	Li-ion Battery (STD)	Li-ion battery(Options)							
FB16R	48 / 250	48 / 300	48 / 350	48 / 400	48 / 450	48 / 525	/	/	48 / 600
FB20R	48 / 300	48 / 250	48 / 350	48 / 400	48 / 450	48 / 525	/	/	48 / 600
FB25R	48 / 350	48 / 400	48 / 450	48 / 525	48 / 300	/	/	/	48 / 600
FB30R/FB35R	80 / 250	80 / 300	80 / 350	80 / 400	80 / 460	80 / 525	/	/	80 / 600
FB30R-II /FB35R-II	80 / 150	80 / 175	80 / 205	80 / 230	80 / 280	80 / 300	80 / 350	80 / 410	80 / 460
FB20R-II	48 / 270	48 / 300	48 / 350	48 / 410	48 / 460	/	/	/	/

Lead- Acid Battery Voltage/Rated capacity(V/Ah)K5

Model	Lead Acid Battery (STD)	Lead-Acid battery(Options)		
FB16R	48 / 375	48 / 420	48 / 480	/
FB20R/FB20R-II	48 / 450	48 / 500	48 / 560	48 / 630
FB25R	48 / 500	48 / 560	48 / 630	/
FB30R/FB35R	80 / 400	80 / 450	80 / 500	/

Load Center Chart

