Advance Information

June 2015 **Internal Use Only**

Full Model Change for 1.0 to 2.0 ton Series Electric Powered 3-wheel Forklift

INTRODUCTION

7FBE series of 1.0 to 2.0 ton electric powered 3-wheel forklift has earned acclaim as high performance electric-powered forklift since the full model change in 2003.
In particular, adoption of the AC power system and SAS(System of Active Stability), TOYOTA original features, established a solid footing in the electric powered forklift market.

However, years passed, our competitors introduced new models and the environmental conservation becomes more and more important. To respond to such a changing market environment, we introduce new 8 series which achieves longer operating time, improved lateral stability, enhanced operator comfort and durability. We have assured that new 8 series will be a great pioneer which expands the electric powered forklift market further.

CONCEPT & SELLING POINTS

Main Selling Points

Index
○ Standard
● Option

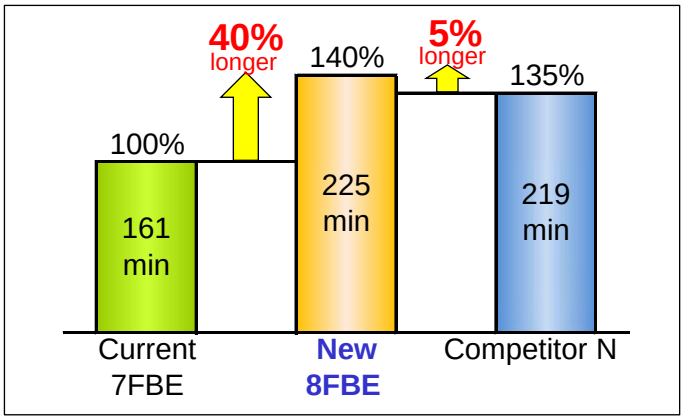
Concept	Function or feature	New 8FBE	Current 7FBE
Improved Energy Efficiency (Longer operating time)	AC Motor Improved	○ (New Motor)	○
	Motor Driver Improved	○ (New Driver)	○
Outstanding Stability & Safety	Operator Presence Sensing (OPS) System	○	○
	SAS(System of Active Stability) -ε [A41A] Improved	● (New)*1	○
	Blue Light [J44C] New	●	–
Outstanding Operability	Steering Wheel Improved	○ (φ300mm)	○ (φ360mm)
	Parking Brake Improved	○	–
	Large Assist Grip New	○	–
	Rear Pillar Assist Grip [L37A] New	●	–
	Mini Lever [E45A] New	●	–
	Joystick [E45B] New	●	–
	Digital Display Improved	○ (New Display)	–
	Multifunction Display [L26A] New	●	–
	Deluxe Multifunction Display [L26B] New	●	–
	Anti-rollback	○	○
	PIN Code Entry System [L38B] New	●	–
	Shock Sensor [L39B] New	●	–
	Emergency Stop Button New	○	–
Outstanding Visibility	Instrument Panel Improved	○ (Display re-location)	○
	Backrest (Lower stay, Grid interval) Improved	○ (Angled lower stay Wide grid interval)	○
	Roof-bar Improved	○ (Angled)	○ (Flat)
Longer Battery Life	Battery Fluid-level Warning New	●*2	-
	Battery Protecting Function [D42B] New	●	-
Easy Battery Exchange	Battery Roll-out [D56A]	●	●
	Battery Carrier [D45D] New	●	-
	Battery Side-out [G25B] New	●	-
Durability	Waterproof Performance Improved	○ (IPX4)	○ (IPX3)
	LED Head Lights [J24L] New	●	-
	LED Yellow Beacon [J19S/U] New	●	-
	LED Rear Working Light [J26A/C] New	●	-
	LED Rear Combination Light [J21D] New	●	-

*1: New functions(Automatic Turn-speed Control & Automatic Vehicle-speed Control) are adopted.
*2: When optional Battery[D00C] is installed, this function is available.

1. Improved Energy Efficiency (Longer Operating Time)

We achieved the best-in-class operating time by new AC motor, new motor driver and improved hydraulic system. The operating time is 40% longer than 7FBE series with H mode and 20% longer than 7 series with S mode

Operating time comparison (H mode)



Test condition

Operating cycle : Toyota 30m operating cycle
Truck specification : 1.5t
390AH/5h Battery (standard)
Pneumatic shaped cushion tire

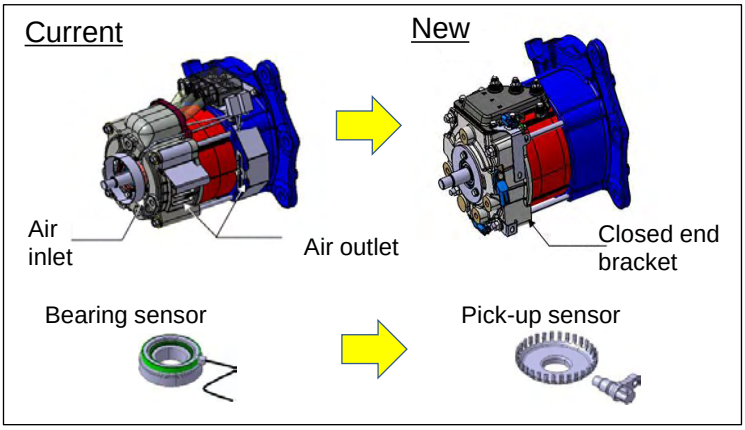
1) New AC Motor

- New way of winding the core coil
- New efficient electrical-magnet steel

Improved energy efficiency

- Motor revolving sensor changes from bearing sensor to pick-up sensor
- Closed structure

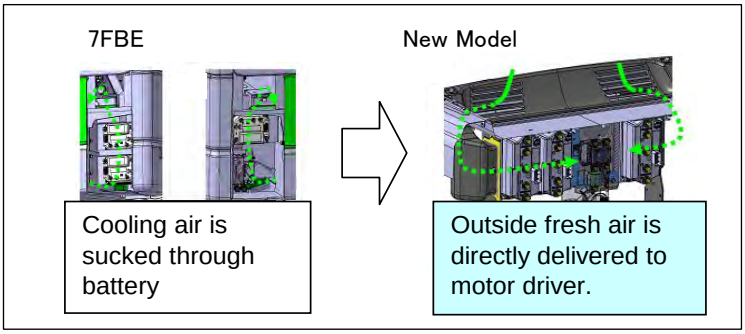
Improved reliability



2) New Motor Driver

- New motor driver made by TICO, adopted Low-loss MOS-FET
- Motor driver cooling system changes from internal ventilation to external ventilation.
  It contributes to the lower motor driver temperature.

Improved energy efficiency and reliability



2. Outstanding Stability & Safety

1) Operator Presence Sensing (OPS) System

- Return-to-neutral function is adopted on all load-handling levers.
  Current 7FBE has no return-to-neutral function on the load-handling levers.
  Only when all load handling levers on the neutral position, load-handling OPS can be released.

Make sure that the operators are on the proper position, when releasing OPS

- The regenerative braking is adopted to travel OPS

Shorter braking distance after travel OPS is activated

2) System of Active Stability (SAS)-ε [A41A]

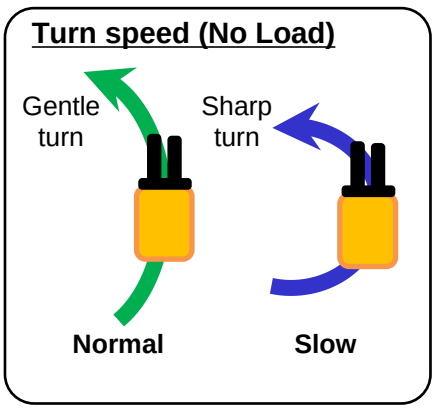
Newly adopted 2 functions " Automatic Turn-speed Control" and " Automatic Vehicle-speed Control"

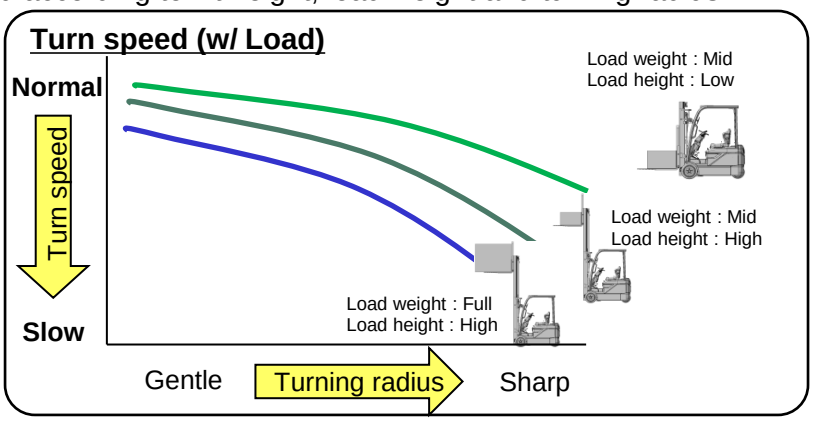
Current function
- Active Mast Front-tilt Angle Control
- Active Mast Tilt Speed Control
- Automatic Fork-leveling Control
- Active Steering Synchronize

+

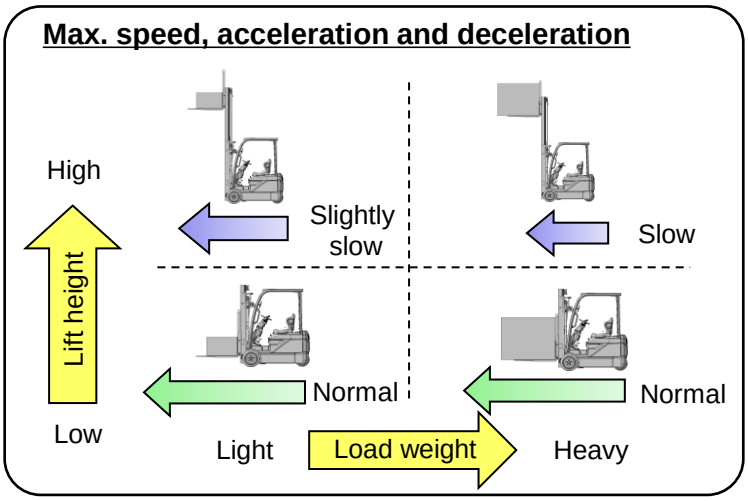
New function
- **Automatic Turn-speed Control**
- **Automatic Vehicle-speed Control**

(1) Automatic Turn-speed Control
This function controls turning speed according to lift height, load weight and turning radius.





(2) Automatic Vehicle-speed Control
At high lift heights, vehicle's speed, acceleration, and deceleration are limited according to load weight, thereby helping to improve vehicle's travel stability.



3) Blue Light [J44C]

Blue Light is adopted as an option. The bright blue spot light informs that the truck is approaching to the associates who are working near the truck.

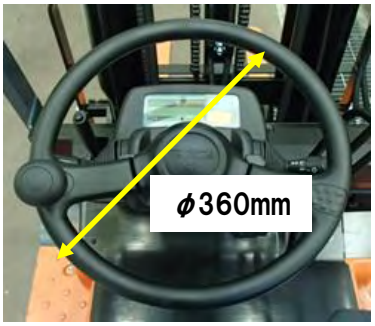
3. Outstanding Operability

1) Small-diameter Steering Wheel

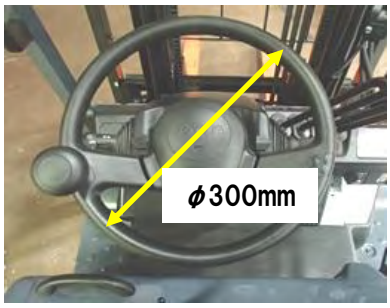
The diameter of the steering wheel reduced from 360 mm to 300 mm

Reduce operating fatigue

Current



New



2) Foot-activated Parking Brake

Foot-activated parking brake is adopted as a standard feature. This eliminates the need for operators to lean forward to activate a parking brake.

Reduce operating fatigue

3) Large Assist Grip

Large assist grip is adopted as a standard feature.

Easy getting on & off

4) Rear Pillar Assist Grip [L37A]

Rear Pillar Assist Grip is adopted as an option.
When operators travel backward, this assists to keep operators' position stable and secure the backward visibility.
Operators can sound a horn while holding the grip.

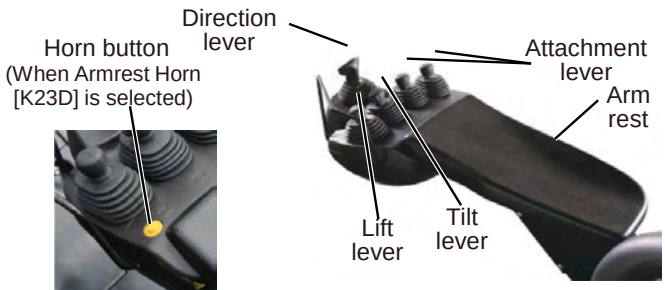
Reduce operating fatigue
Secure the backward visibility

Rear pillar assist grip with horn button

4) Mini Lever [E45A] & Joystick [E45B]

Mini Lever and Joystick are adopted as options. It enables lift, tilt, travel direction change and attachment operations.
For the truck with Mini Lever or Joystick, the backward automatic fork-leveling control function is available.
The horn button on the armrest is available as an option so that operators can sound a horn with small movement.

Reduce operating fatigue



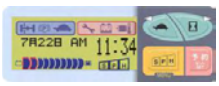
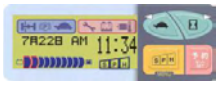
Mini lever　　Joy stick

5) Digital Display / Multifunction Display [L26A] / Deluxe Multifunction Display [L26B]

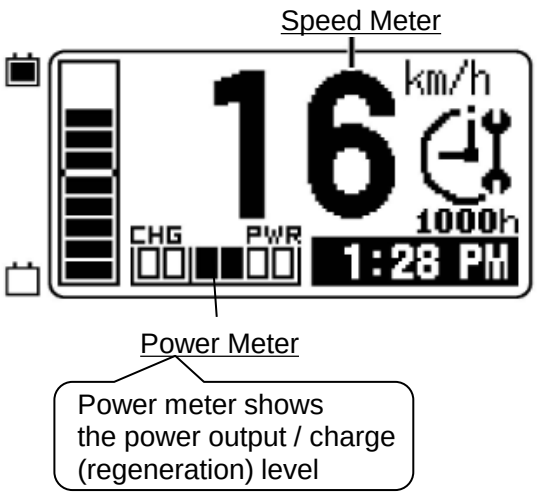
Standard Display : Segment-based liquid-crystal display

Easy to check the status of truck

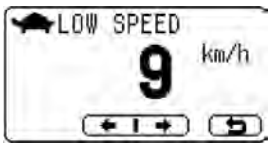
Option Display : LED warning lights and a full dot-matrix liquid-crystal display

	Current 7FBE		New 8FBE		
	STD Display	All-round Display(OPT)	STD Display	Multifunction Display [L26A/B]	
Appearace					
Number of Function	36	42	27	-	DX
				58	58 + Load meter

Function of Multifunction Display

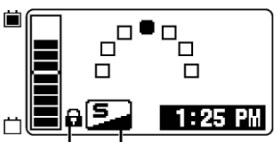


Low Speed Setting

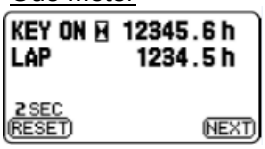


Auto Power Off

Wheel Indicator



Odo Meter



Load Meter (Only for DX)

There are much more functions!!

"kg" indication is also available

6) Anti-rollback

As with current 7FBE series, Anti-rollback is adopted as a standard feature.
When an accelerator is released while on a grade, this feature limits a grade-descent speed to a fixed value, thereby preventing roll back.
For the new 8FBE series below 2 points are different from current 7FBE series.

- Anti-rollback speed : The speed becomes slower (0.5 - 1 km/h adjustable)
- The truck stops after releasing the accelerator for a while, and start to rollback and gradually reach the pre-set rollback speed

Improve the productivity and operability on grades

7) PIN Code Entry System [L38B]

This feature prevents starting the truck until a registered personal identification number (PIN) code is entered. PIN codes for up to 100 persons can be registered.
The truck performance settings can be registered up to 10 sets. It enables restricting truck functioning and implementing preferred settings according to operators.

Prevent unauthorized person from using the forklift

8) Shock Sensor [L39B]

This feature detects the impact on the truck and informs operators / managers by warning indicator and warning alarm. It also records time and date of occurrence in the internal memory of Multifunction Display. Warnings can be cancelled only by a manager, so operators must report all such incidents to a manager.

Reduce rough operation and maintenance costs

9) Emergency Stop Button

Emergency Stop Button is located on the right of instrument panel.

Secure even in the case of an emergency

4. Outstanding Visibility

- Design change of instrument panel (display re-location)
- Backrest Design
- Angled Roof-bar

Outstanding forward, upward, fork-tip visibility

Instrument panel

Current

New

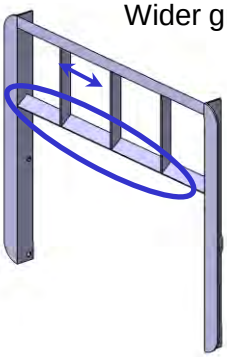
Right side of instrument panel

Backrest Design

Current

New

Wider grid interval



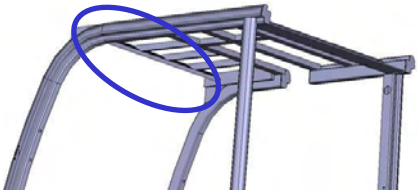
Angled lower stay

* The lower stay for 8FBE20 is flat plate type as current 7FBE series

Angled Roof-bar

Current

New



Angled roof bar

5. Longer Battery Life

1) Battery Fluid-level Warning

When an optional Battery [D00C] is installed, fluid-level warning light on the display informs operators of the lack of battery fluid by warning light and warning alarm.
Fluid-level warning light on the display lights up even when a key is switched off.

Easy to notice the lack of battery fluid

2) Battery Protecting Function [D42B]

- Battery fluid-level warning + Performance limitation
- Battery fluid overheat warning + Performance limitation

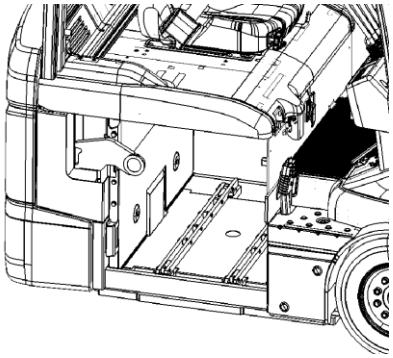
Acceleration, Max speed
Gradeability, Drawbar pull
are limited

This function detects battery fluid level and battery temperature, and when detects low level battery fluid or high battery temperature, it warns with warning light and warning alarm.
If operators continue to use the truck with low battery fluid level or high battery temperature, the truck performance becomes limited.

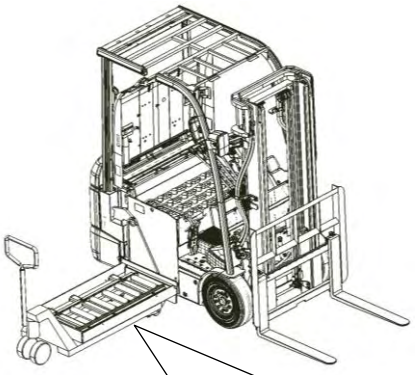
Helps prevent the battery degradation

6. Easy Battery Exchange

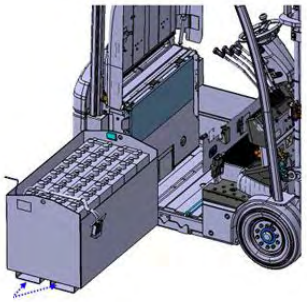
1) Battery Roll-out [D56A]



2) Battery Carrier [D45D]



3) Battery Side-out [G25B]



Fork pocket

➡ **Shorter battery exchange time**

Battery Carrier

* Hand pallet truck is not included in Battery Carrier [D45D].

7. Durability

1) High Waterproof Performance (IPX4)

The layout change of the controller and other electirc parts improves a resistance level to water. Thereby, the new 8FBE series comply with International Protection Rating of IPX4.

➡ **8FBE can operate at a wide range of worksite**

2) LED lights (OPT)

- Long life : Approx. 20,000 hours
- Low electricity consumption : 1/3 comparing to standard bulb type light
- Enough irradiated range both vertical and horizontal

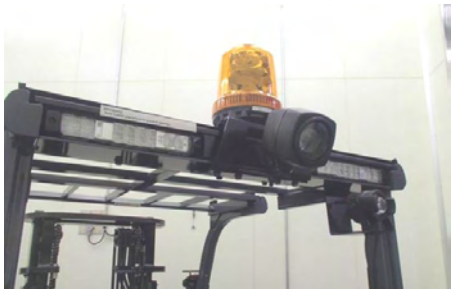
➡ **Reduce running and maintenance cost**

<LED lights option line-up>

LED Head Lights	J24L
LED Yellow Beacon On The Overhead Guard	J19S
LED Yellow Beacon On The Overhead Guard (Key-On Position)	J19U
LED Rear Combination Lights	J21D
LED Rear Working Light	J26A
LED Rear Working Light (Selective Lighting Condition)	J26C

Head Lights

Rear Combination Lights / Yellow Beacon / Rear Working Light



Design

Design Concept : Compact & Stable

1. Low center of gravity
2. Larger curve for the corner of counter weight
   → Small turning radius
   Reduce the damage on the counter weight

Rounded pillar

→ **Large Entry / Exit space**

Redesigned side panels (Thickness : 3.2mm)

→ **Improve durability**

Counter weight guard cover

→ **Improve durability**

Family design as 8 Series

New 8FBE

8FG/D10-J35

(Ref.) Current 7FBE

Model Line-up

	Model	Capacity				
		1.0t	1.25t	1.5t	1.75t	2.0t
Current	7FBE	❍	❍	❍	❍	❍
New	8FBE	❍	❍	❍	❍	❍

Lifting / Lowering Speed

Model			8FBE10		8FBE13		8FBE15		8FBE18		8FBE20	
Mast	Operation	Mode	No Load (mm/s)	Full Load (mm/s)	No Load (mm/s)	Full Load (mm/s)	No Load (mm/s)	Full Load (mm/s)	No Load (mm/s)	Full Load (mm/s)	No Load (mm/s)	Full Load (mm/s)
V	Lifting	H	610	490	610	460	610	430	610	380	500	340
		P	540	410	540	380	540	350	540	320	450	280
		S	480	340	480	310	480	280	480	250	400	220
		E	480	340	480	310	480	280	480	250	400	220
	Lowering	ALL	550	530	550	530	550	530	550	530	500	500
FSV	Lifting	H	560	480	560	470	560	440	560	430	480	360
		P	500	410	500	390	500	360	500	360	420	300
		S	450	340	450	320	450	280	450	270	380	220
		E	450	340	450	320	450	280	450	270	380	220
	Lowering	ALL	470	490	470	490	470	490	470	490	480	490
FV	Lifting	H	550	460	550	440	550	420	550	400	Not Available	
		P	490	390	490	370	490	340	490	320		
		S	440	320	440	300	440	270	440	240		
		E	440	320	440	300	440	270	440	240		
	Lowering	ALL	460	470	460	470	460	470	460	470		

Operating Time

Operating Time (S mode)

Model	Battery Capacity		Operating Time		
	Voltage (V)	AH/5hrs		[Ref.] 7FBE	( ):Battery Capacity
8FBE10	48	280	3h 30m	2h 55m	(280)
		320	4h 00m	3h 20m	(312)
		370	5h 00m	4h 10m	(370)
8FBE13		280	3h 25m	2h 50m	(280)
		320	3h 55m	3h 15m	(312)
		370	4h 50m	4h 00m	(370)
8FBE15		390	4h 50m	4h 00m	(390)
		470	6h 00m	5h 05m	(476)
		565	7h 25m	6h 10m	(565)
8FBE18		390	4h 25m	3h 40m	(390)
		470	5h 35m	4h 45m	(476)
		565	6h 50m	5h 50m	(565)
8FBE20		390	4h 20m	3h 35m	(390)
		470	5h 25m	4h 40m	(476)
		565	6h 40m	5h 40m	(565)
		645	7h 50m	6h 35m	(645)

Note:
1. The applied operating cycle:
   Toyota Standard 30m Operating Cycle.
2. Operating time of P mode:
   approx. 80% of S mode (1 ton model)
   approx. 85% of S mode (2 ton model)
3. Operating time of H mode:
   approx. 70% of S mode (1 ton model)
   approx. 75% of S mode (2 ton model)
4. Operating time of E mode:
   approx. 120% of S mode
5. When Mini lever and Joystick is equipped, the operating time will be approx.5% shorter than the standard spec.

Energy Consumption

Energy Consumption (VDI Cycle)

Model	Tested Load	Energy Consumption
8FBE10	1000kg	3.2kWh/h
8FBE13	1250kg	3.3kWh/h
8FBE15	1500kg	3.5kWh/h
8FBE18	1750kg	3.8kWh/h
8FBE20	2000kg	4.0kWh/h

Note:
The energy consumption is measured by VDI Operating Cycle (60 sec.), and may include tolerances of ±10%.

Competitor Comparison on Energy Consumption (VDI Cycle)

Rated Capacity	Toyota	Competitors				
		Jungheinrich (EFG series)	Linde (E series)	Still (RX20 series)	Hyster (JXNT series)	Yale (VT series)
1.0t	3.2kWh/h					
1.3t	3.3kWh/h	4.2kWh/h				
1.5t	3.5kWh/h	4.3kWh/h		4.3kWh/h	4.2kWh/h	4.2kWh/h
1.8t	3.8kWh/h	4.7kWh/h	4.8kWh/h	4.7kWh/h	5.0kWh/h	5.0kWh/h
2.0t	4.0kWh/h	4.9kWh/h	5.3kWh/h	5.0kWh/h	5.7kWh/h	5.7kWh/h

Toyota has the best-in-class energy efficiency!!

Difference of Option and Attachment Availability from 7FBE Series

These lists show you the newly adopted or discontinued options and attachments.
For the whole available option list of new 8 series, please refer to the option availability chart.

Newly Adopted Option List

OPT	Code	Current	New
Key-less Ignition Switch	D29A	-	❍
Battery Protecting Function	D42B	-	❍
Battery Carrier	D45D	-	❍
12V Power Supply	D59B	-	❍
Wire Harness For Accessories	D61B	-	❍
Right Hand Shift Lever	E11B	-	❍
EZ Pedal	E43A	-	❍
Mini-Levers with Armrest	E45A	-	❍
Joystick Lever	E45B	-	❍
Synchronized Steering	E72A	-	❍
Battery Side-Out	G25B	-	❍
Resin Roof	H01E	-	❍
Drive-In Rack Overhead Guard	H04C	-	❍
Yellow Beacon On The Overhead Guard (Key-On Position)	J19E	-	❍
LED Yellow Beacon On The Overhead Guard	J19S	-	❍
LED Yellow Beacon On The Overhead Guard (Key-On Position)	J19U	-	❍
LED Flashing Beacon (Separately Attached)	J19V	-	❍
Yellow Beacon (Separately Attached)	J19X	-	❍
LED Rear Combination Lights	J21D	-	❍
LED Head Lights	J24L	-	❍
LED Rear Working Light (Selective Lighting Condition)	J26C	-	❍
Blue Light (Selective Lighting Condition)	J44C	-	❍
Forward & Back-Up Chime	K21A	-	❍
Armrest Horn	K23D	-	❍
Individual Key	L00A	-	❍
Multifunction Display	L26A	-	❍
Deluxe Multifunction Display	L26B	-	❍
Rear-Pillar Assist Grip	L37A	-	❍
PIN Code Entry System	L38B	-	❍
Shock Sensor	L39B	-	❍
CAN System for Telematics	L39C	-	❍
Sleeved Forks 920, 1070	P10A	-	❍
Clamp Release Interlock 3rd Lever	Q15A	-	❍
Clamp Release Interlock 4th Lever	Q15B	-	❍
Center Pipe Connector	Q49A	-	❍
Center & Side Pipe Connector	Q49B	-	❍
Body Color (602 Green)	R00M	-	❍
Cup Holder	S05B	-	❍

Newly Adopted Attachment List

ATT	Code	Current	New
Hydraulic Fork Shifter (Chain Type) [A331]	C002	-	❍
Hydraulic Fork Shifter [A351]	C006	-	❍

Discontinued Option List

OPT	Code	Current	New
Spare Charger	C37A	❍	-
Dry Cell Battery 48V	D00Q	❍	-
Spare Battery (Dry Cell)	D20J	❍	-
Snow Tire, Front	F01D	❍	-
Spare Tire, Front	F30A	❍	-
Spare Tire, Front (Snow 2pcs)	F30P	❍	-
Spare Tire, Front (Snow)	F30W	❍	-
Snow Tire, Rear	F41C	❍	-
Spare Tire, Rear	F75A	❍	-
Spare Tire, Rear(Snow 2pcs)	F75P	❍	-
Spare Tire, Rear (Snow)	F75W	❍	-
Wide Visible Mast (SV)	M00C	❍	-
Full-Free Lift Two-Stage Mast (FV) 2500, 2700	M00F	❍	-
Name Plate (German)	S31D	❍	-
Name plate (Lituanian)	S31Y	❍	-
Spare Tire Packing, Front	T08A	❍	-
Spare Tire Packing, Rear	T09A	❍	-
Spare Charger Packing	T21A	❍	-
Spare Tire Packing (Separate)	T38A	❍	-
Spare Tire Packing (Palette)	T38B	❍	-

Standard Specification

❍ = Standard P = Option

	Item	Model	
		8FBE series	7FBE series
Electrical System	Drive AC motor	❍ (New)	❍
	Load handling / Power steering AC motor	❍ (New)	❍
	Digital Display	❍ (New)	❍
	Power select function	❍	❍
	Power keep function	❍	❍
	Same key for multiple forkilifts	❍	❍
	Emergency Power Shut-Down Button	❍	-
Chassis	System of Active Stability	P (incl. Turn Speed Control)	❍
	Operator Presence Sensing System	❍	❍
	ORS Seat	❍	❍
	Main Brake (Dry disc)	❍	❍
	Parking Brake	❍ Foot-activated parking brake	❍ Hand parking brake
	Full Hydraulic Power Steering (FHPS)	❍	❍
	Syncronized Steering	P	❍
Body	Assist Grip(Left side)	❍	❍
	Memory Tilt Steering Column	❍	❍
	Steering wheel	❍ (Steering diameter 300mm)	❍ (Steering diameter 360mm)
	Battery Hood Damper (Stay)	❍	❍
	Rear Combination Lights	❍	P
	Jacking points	❍	❍
	Drawbar Pin	❍	❍
	Floor Mat	❍	❍
	Hour Meter	❍	❍
	Electric Horn	❍	❍
	Document Clip	❍	❍
	Anti-rollback	❍	❍
Loading	Wide Visible Mast	V3000	V3000
	Easy Down System	Equipped on V mast	Equipped on V mast
	Backrest (Angled Lower Stay)	❍ (Flat steel for 2t model)	❍ (Flat steel for 2t model)

8FBE10
8FBE13

MAIN VEHICLE SPECIFICATIONS *(June 2015)*

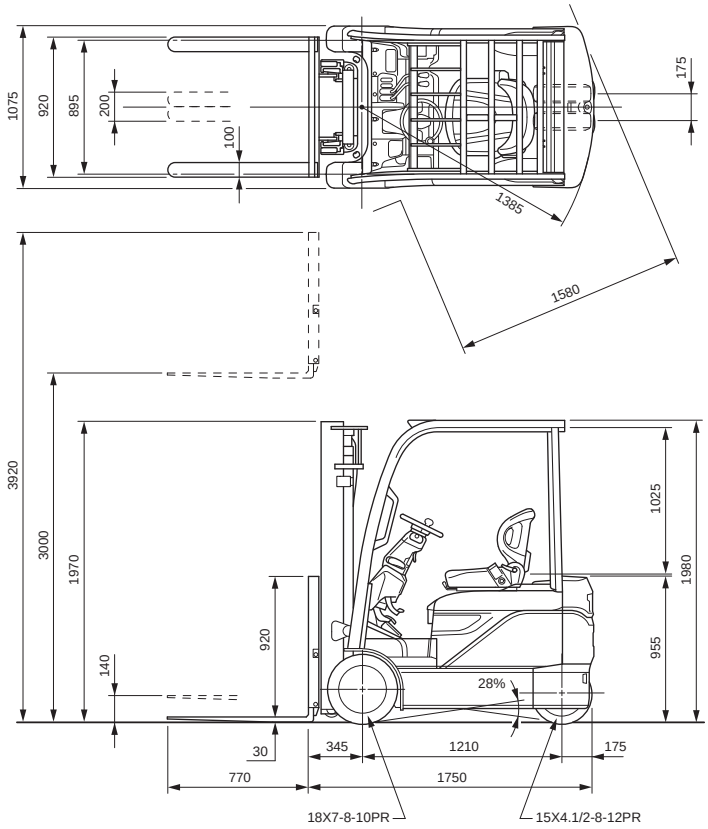
1	Manufacturer				TOYOTA	TOYOTA
2	Model				**8FBE10**	**8FBE13**
3	Load Capacity			kg	1000	1250
4	Load Center			mm	500	500
5	Power Type				Battery	Battery
6	Operator Position				Rider Seated	Rider Seated
7	Tire Type		Front/Rear		Pneumatic	Pneumatic
8	Wheels (x = driven)		Front/Rear		2x/2	2x/2
9	Maximum Fork Height (MFH)			mm	3000	3000
10	Free Lift			mm	140	145
13	Fork Size		T x W x L	mm	30x100x770	35x100x850
	Fork Spread (Outside)		MAX./MIN.	mm	920/200	920/200
14	Tilt Range		FWD/BWD	deg	5/6.5	5/6.5
15	Length to Fork Face			mm	1750	1755
16	Overall Width			mm	1075	1075
17	Mast Lowered Height			mm	1970	1970
18	Mast Extended Height			mm	3920	3920
19	Overhead Guard Height			mm	1980	1980
21	Turning Radius (Outside)			mm	1385	1400
22	Load Distance (Centerline of front axle to front face of forks)			mm	345	350
	Rear Overhang			mm	175	190
23	Basic Right Angle Stacking Aisle Width (Add load length and clearance)			mm	1730	1750
	Intersecting Aisle Width			mm	1580	1600
24	Speeds *	Travel, Max. (FWD/RVS)	Full Load	km/h	15/15	15/15
			No Load	km/h	16.5/16.5	16.5/16.5
25		Lifting	Full Load	mm/sec	490	450
			No Load	mm/sec	610	610
26		Lowering	Full Load	mm/sec	530	530
			No Load	mm/sec	550	550
27	Drawbar Pull *	Full Load/ No Load	3-Minute Ratings	N (kg)	9600/9100 (980/930)	9500/9100 (970/930)
			5-Minute Ratings	N (kg)	9600/9100 (980/930)	9500/9100 (970/930)
			60-Minute Ratings	N (kg)	5300/5100 (540/520)	5200/5100 (530/520)
29	Gradeability *	Full Load/ No Load	3-Minute Ratings	% (tanθ)	32/24	27/22
			5-Minute Ratings	% (tanθ)	32/24	27/22
			30-Minute Ratings	% (tanθ)	24/24	20/22
32	Total Weight	Without Battery		kg	1675	1875
33	Weight Distribution (With STD Battery)	Full Load	Front	kg	2855	3280
			Rear	kg	370	395
34		No Load	Front	kg	1160	1150
			Rear	kg	1065	1275
35	Tires	Number	Front/Rear		2/2	2/2
36		Size	Front		18x7-8-10PR	18x7-8-14PR
37			Rear		15x4.1/2-8-12PR	15x4.1/2-8-12PR
38	Wheelbase			mm	1210	1210
39	Tread		Front	mm	895	895
			Rear	mm	175	175
	Backrest Height			mm	920	920
	Overhead Guard Clearance			mm	1025	1025
	Counterweight Height			mm	955	955
	Step Height/Floor Height			mm	430/545	430/545
40	Underclearance	Mast (Full Load)		mm	75	75
41		Center of Wheelbase (Full Load)		mm	80	80
		Drive Axle (Full Load)		mm	90	90
		Counterweight (No Load)		mm	85	85
		Minimum Under Clearance (No Load)		mm	60 (Frame)	60 (Frame)
	Grade Clearance	Frame		% (tanθ)	28	28
42	Brake	Service (Foot)			Dry Disc	Dry Disc
43		Parking			Foot	Foot
45	Battery	Voltage/Capacity (5-hour rating)	STD	V/AH	48/280	48/280
			High	V/AH	48/370	48/370
46		Weight (STD Capacity Type)		kg	550	550
47	Electric Motors	Drive		kW	4.9x2	4.9x2
48		Load Handling		kW	9.2	9.2
54	Control Type	Drive			Trasistor inverter	Trasistor inverter
		Load Handling			Trasistor inverter	Trasistor inverter
57	Operating Pressure	For Attachments		Mpa (psi)	13.7 (2000)	13.7 (2000)

NOTE: * Computed values.

DIMENSIONAL DRAWINGS *(June 2015)*

Unit: mm

8FBE10

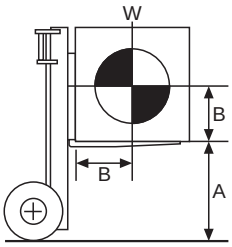


UNDERCLEARANCE

Mast (Full Load)----------	75
Center of Wheelbase (Full Load)----------	80
Drive Axle (Full Load)----------	90
Counterweight (No Load)----------	85
Minimum Under Clearance (No Load)---	60 (Frame)

RATED CAPACITIES *(June 2015)*

8FBE10



A: Max. Fork Height
B: Load Center
W: Capacity

V, FV Mast (PSC)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1000	1000	1000	1000	1000	1000	970	870	820
	600	890	890	890	890	890	890	870	780	730
	700	810	810	810	810	810	810	780	700	660
	800	740	740	740	740	740	740	720	640	610
	900	680	680	680	680	680	680	660	590	560
	1000	630	630	630	630	630	630	610	550	520
	1100	590	590	590	590	590	590	570	510	480
	1200	550	550	550	550	550	550	530	480	450

V, FV Mast (PN)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1000	1000	1000	1000	1000	1000	950	850	800
	600	890	890	890	890	890	890	850	760	720
	700	810	810	810	810	810	810	770	690	650
	800	740	740	740	740	740	740	700	630	590
	900	680	680	680	680	680	680	650	580	540
	1000	630	630	630	630	630	630	600	530	500
	1100	590	590	590	590	590	590	560	500	470
	1200	550	550	550	550	550	550	520	470	440

FSV Mast (PSC)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	950	950	900	850	850	770	720	520
	600	850	850	810	760	760	690	650	470
	700	770	770	730	690	690	630	590	420
	800	710	710	670	630	630	570	540	390
	900	650	650	620	590	590	530	500	360
	1000	610	610	570	540	540	490	460	330
	1100	570	570	540	510	510	460	430	310
	1200	530	530	500	470	470	430	400	290

FSV Mast (PN)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	950	950	900	850	850	750	700	500
	600	850	850	810	760	760	670	630	450
	700	770	770	730	690	690	610	570	410
	800	710	710	670	630	630	560	520	370
	900	650	650	620	590	590	520	480	340
	1000	610	610	570	540	540	480	450	320
	1100	570	570	540	510	510	450	420	300
	1200	530	530	500	470	470	420	390	280

SPECIAL MAST *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

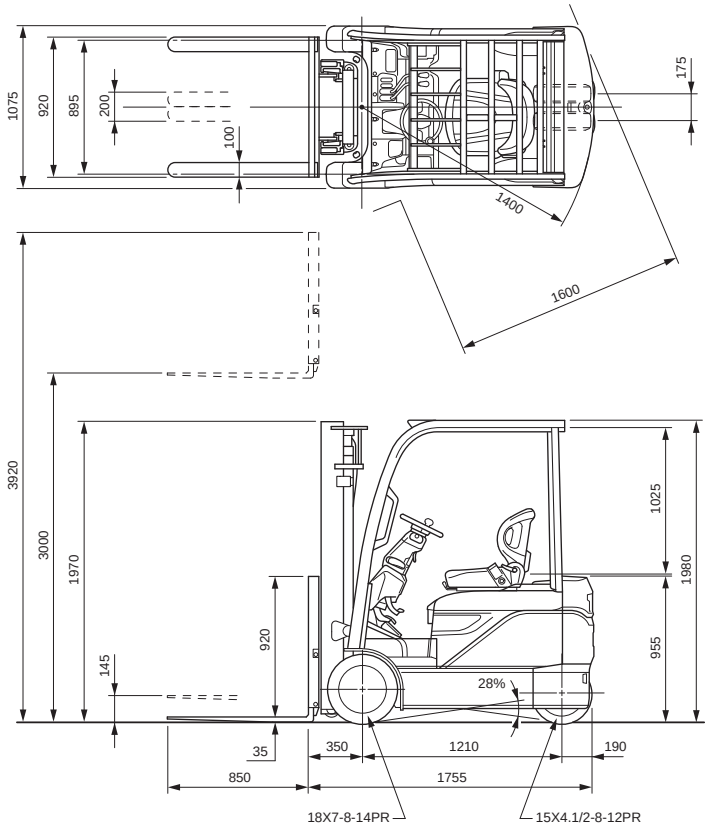
Model				**8FBE10**											
Type of Mast				V				FV				FSV			
PERFORMANCE															
Power Mode				H	P	S	E	H	P	S	E	H	P	S	E
Speeds	Lifting	Full Load	mm/sec	490	410	340	340	460	390	320	320	480	410	340	340
		No Load	mm/sec	610	540	480	480	550	490	440	440	560	500	450	450
	Lowering	Full Load	mm/sec	530	530	530	530	470	470	470	470	490	490	490	490
		No Load	mm/sec	550	550	550	550	460	460	460	460	470	470	470	470
DIMENSIONS															
Load Distance (Centerline of front axle to front face of forks)			mm	345				345				385			

NOTE: H High power mode.
P Power mode.
S Standard mode.
E Eco mode.

DIMENSIONAL DRAWINGS *(June 2015)*

Unit: mm

8FBE13

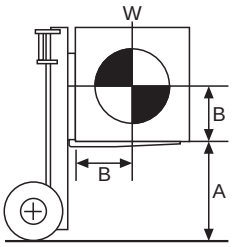


UNDERCLEARANCE

Mast (Full Load)----------	75
Center of Wheelbase (Full Load)----------	80
Drive Axle (Full Load)----------	90
Counterweight (No Load)----------	85
Minimum Under Clearance (No Load)---	60 (Frame)

RATED CAPACITIES *(June 2015)*

8FBE13



A: Max. Fork Height
B: Load Center
W: Capacity

V, FV Mast (PSC)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1250	1250	1250	1250	1250	1250	1220	1120	970
	600	1120	1120	1120	1120	1120	1120	1090	1000	870
	700	1010	1010	1010	1010	1010	1010	990	910	790
	800	920	920	920	920	920	920	900	830	720
	900	850	850	850	850	850	850	830	760	660
	1000	790	790	790	790	790	790	770	710	610
	1100	730	730	730	730	730	730	720	660	570
	1200	690	690	690	690	690	690	670	610	530

V, FV Mast (PN)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1250	1250	1250	1250	1250	1250	1200	1100	950
	600	1120	1120	1120	1120	1120	1120	1070	980	850
	700	1010	1010	1010	1010	1010	1010	970	890	770
	800	920	920	920	920	920	920	890	810	700
	900	850	850	850	850	850	850	820	750	650
	1000	790	790	790	790	790	790	760	690	600
	1100	730	730	730	730	730	730	700	650	560
	1200	690	690	690	690	690	690	660	600	520

FSV Mast (PSC)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1150	1150	1100	1000	1000	920	820	620
	600	1030	1030	990	900	900	830	740	560
	700	940	940	900	820	820	750	670	510
	800	860	860	820	750	750	690	610	460
	900	790	790	760	690	690	630	570	430
	1000	740	740	700	640	640	590	520	400
	1100	690	690	660	600	600	550	490	370
	1200	640	640	620	560	560	510	460	350

FSV Mast (PN)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1150	1150	1100	1000	1000	900	800	600
	600	1030	1030	990	900	900	810	720	540
	700	940	940	900	820	820	730	650	490
	800	860	860	820	750	750	670	600	450
	900	790	790	760	690	690	620	550	410
	1000	740	740	700	640	640	580	510	380
	1100	690	690	660	600	600	540	480	360
	1200	640	640	620	560	560	500	450	340

SPECIAL MAST *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

Model				**8FBE13**											
Type of Mast				V				FV				FSV			
PERFORMANCE															
Power Mode				H	P	S	E	H	P	S	E	H	P	S	E
Speeds	Lifting	Full Load	mm/sec	460	380	310	310	440	370	300	300	470	390	320	320
		No Load	mm/sec	610	540	480	480	550	490	440	440	560	500	450	450
	Lowering	Full Load	mm/sec	530	530	530	530	470	470	470	470	490	490	490	490
		No Load	mm/sec	550	550	550	550	460	460	460	460	470	470	470	470
DIMENSIONS															
Load Distance (Centerline of front axle to front face of forks)			mm	350				350				390			

NOTE: H High power mode.
P Power mode.
S Standard mode.
E Eco mode.

MAST SPECIFICATIONS & RATED CAPACITIES *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

8FBE10

Mast Type	Maximum Fork Height	Overall Height			Free Lift		Tilt Range		Load Capacity at 500 mm LC	
		Lowered	Extended		Without Load Backrest	With Standard Load Backrest	FWD	BWD	PSC	PN
			Without Load Backrest	With Standard Load Backrest						
	mm	mm	mm	mm	mm	mm	deg	deg	kg	kg
V	2500	1720	3055*	3420	140	140	5	5	1000	1000
	2700	1820	3255*	3620	140	140	5	6.5	1000	1000
	3000	1970	3555*	3920	140	140	5	6.5	1000	1000
	3300	2120	3855*	4220	140	140	5	6.5	1000	1000
	3500	2220	4055*	4420	140	140	5	6.5	1000	1000
	3700	2380	4255*	4620	140	140	5	6.5	1000	1000
	4000	2570	4555*	4920	140	140	5	6.5	970	950
	4500	2820	5055*	5420	140	140	5	6.5	870	850
	5000	3070	5555*	5920	140	140	5	6.5	820	800
FV	3000	1970	3580	3920	1420	1050	5	6.5	1000	1000
	3300	2120	3880	4220	1570	1200	5	6.5	1000	1000
	3500	2220	4080	4420	1670	1300	5	6.5	1000	1000
	3700	2380	4280	4620	1830	1460	5	6.5	1000	1000
	4000	2570	4580	4920	2020	1650	5	6.5	970	950
FSV	3700	1770	4275	4620	1225	850	5	6.5	950	950
	4000	1870	4575	4920	1325	950	5	6.5	950	950
	4300	1970	4875	5220	1425	1050	5	6.5	900	900
	4500	2040	5075	5420	1495	1120	5	6.5	850	850
	4700	2120	5275	5620	1575	1200	5	6.5	850	850
	5000	2220	5575	5920	1675	1300	5	6.5	770	750
	5500	2380	6075	6420	1835	1460	5	6.5	720	700
	6000	2570	6575	6920	2025	1650	5	6.5	520	500

NOTE: Height of standard load backrest is 920 mm.
* with A4 piping, plus 85 mm.

8FBE13

Mast Type	Maximum Fork Height	Overall Height			Free Lift		Tilt Range		Load Capacity at 500 mm LC	
		Lowered	Extended		Without Load Backrest	With Standard Load Backrest	FWD	BWD	PSC	PN
			Without Load Backrest	With Standard Load Backrest						
	mm	mm	mm	mm	mm	mm	deg	deg	kg	kg
V	2500	1720	3055*	3420	145	145	5	5	1250	1250
	2700	1820	3255*	3620	145	145	5	6.5	1250	1250
	3000	1970	3555*	3920	145	145	5	6.5	1250	1250
	3300	2120	3855*	4220	145	145	5	6.5	1250	1250
	3500	2220	4055*	4420	145	145	5	6.5	1250	1250
	3700	2380	4255*	4620	145	145	5	6.5	1250	1250
	4000	2570	4555*	4920	145	145	5	6.5	1220	1200
	4500	2820	5055*	5420	145	145	5	6.5	1120	1100
	5000	3070	5555*	5920	145	145	5	6.5	970	950
FV	3000	1970	3600	3920	1405	1055	5	6.5	1250	1250
	3300	2120	3900	4220	1555	1205	5	6.5	1250	1250
	3500	2220	4100	4420	1655	1305	5	6.5	1250	1250
	3700	2380	4300	4620	1815	1465	5	6.5	1250	1250
	4000	2570	4600	4920	2005	1655	5	6.5	1220	1200
FSV	3700	1770	4275	4620	1225	855	5	6.5	1150	1150
	4000	1870	4575	4920	1325	955	5	6.5	1150	1150
	4300	1970	4875	5220	1425	1055	5	6.5	1100	1100
	4500	2040	5075	5420	1495	1125	5	6.5	1000	1000
	4700	2120	5275	5620	1575	1205	5	6.5	1000	1000
	5000	2220	5575	5920	1675	1305	5	6.5	920	900
	5500	2380	6075	6420	1835	1465	5	6.5	820	800
	6000	2570	6575	6920	2025	1655	5	6.5	620	600

NOTE: Height of standard load backrest is 920 mm.
* with A4 piping, plus 85 mm.

8FBE15.18
8FBE20

MAIN VEHICLE SPECIFICATIONS *(June 2015)*

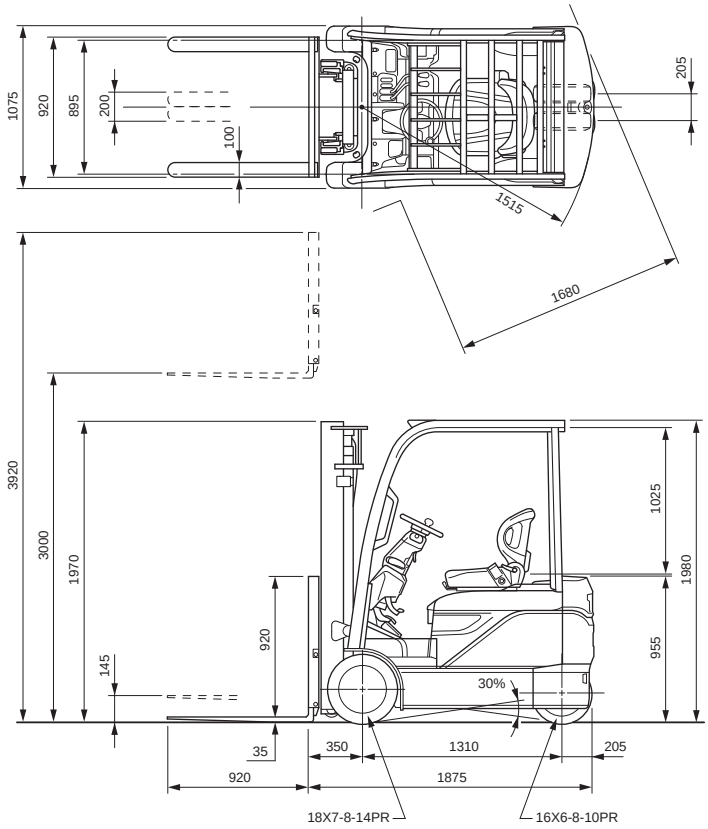
1	Manufacturer				TOYOTA	TOYOTA	TOYOTA
2	Model				**8FBE15**	**8FBE18**	**8FBE20**
3	Load Capacity			kg	1500	1750	2000
4	Load Center			mm	500	500	500
5	Power Type				Battery	Battery	Battery
6	Operator Position				Rider Seated	Rider Seated	Rider Seated
7	Tire Type		Front/Rear		Pneumatic	Pneumatic	Pneumatic
8	Wheels (x = driven)		Front/Rear		2x/2	2x/2	2x/2
9	Maximum Fork Height (MFH)			mm	3000	3000	3000
10	Free Lift			mm	145	145	125
13	Fork Size		T x W x L	mm	35x100x920	35x100x920	38x120x920
	Fork Spread (Outside)		MAX./MIN.	mm	920/200	920/200	1020/240
14	Tilt Range		FWD/BWD	deg	5/6.5	5/6.5	5/6.5
15	Length to Fork Face			mm	1875	1905	2045
16	Overall Width			mm	1075	1075	1075
17	Mast Lowered Height			mm	1970	1970	1970
18	Mast Extended Height			mm	3920	3920	3920
19	Overhead Guard Height			mm	1980	1980	1980
21	Turning Radius (Outside)			mm	1515	1550	1675
22	Load Distance (Centerline of front axle to front face of forks)			mm	350	350	365
	Rear Overhang			mm	205	240	275
23	Basic Right Angle Stacking Aisle Width (Add load length and clearance)			mm	1865	1900	2040
	Intersecting Aisle Width			mm	1680	1695	1790
24	Speeds *	Travel, Max. (FWD/RVS)	Full Load	km/h	15/15	14.5/14.5	14/14
			No Load	km/h	16.5/16.5	16/16	15.5/15.5
25		Lifting	Full Load	mm/sec	430	390	340
			No Load	mm/sec	610	610	500
26		Lowering	Full Load	mm/sec	530	530	500
			No Load	mm/sec	550	550	500
27	Drawbar Pull *	Full Load/ No Load	3-Minute Ratings	N (kg)	9400/9000 (960/920)	9400/9000 (960/920)	9200/9200 (940/940)
			5-Minute Ratings	N (kg)	9400/9000 (960/920)	9400/9000 (960/920)	9200/9200 (940/940)
			60-Minute Ratings	N (kg)	5100/5000 (520/510)	5000/5000 (510/510)	4800/5100 (490/520)
29	Gradeability *	Full Load/ No Load	3-Minute Ratings	% (tanθ)	24/21	21/20	19/20
			5-Minute Ratings	% (tanθ)	24/21	21/20	19/20
			30-Minute Ratings	% (tanθ)	18/21	16/20	14/20
32	Total Weight	Without Battery		kg	2005	2190	2485
33	Weight Distribution (With STD Battery)	Full Load	Front	kg	3680	4100	4565
			Rear	kg	505	520	610
34		No Load	Front	kg	1210	1215	1325
			Rear	kg	1475	1655	1850
35	Tires	Number	Front/Rear		2/2	2/2	2/2
36		Size	Front		18x7-8-14PR	18x7-8-16PR	18x7-8/4.33
37			Rear		16x6-8-10PR	16x6-8-10PR	16x6-8-10PR
38	Wheelbase			mm	1310	1310	1400
39	Tread		Front	mm	895	895	895
			Rear	mm	205	205	205
	Backrest Height			mm	920	920	920
	Overhead Guard Clearance			mm	1025	1025	1025
	Counterweight Height			mm	955	955	955
	Step Height/Floor Height			mm	430/545	430/545	430/545
40	Underclearance	Mast (Full Load)		mm	75	75	75
41		Center of Wheelbase (Full Load)		mm	80	80	80
		Drive Axle (Full Load)		mm	90	90	90
		Counterweight (No Load)		mm	85	85	85
		Minimum Under Clearance (No Load)		mm	60 (Frame)	60 (Frame)	60 (Frame)
	Grade Clearance	Frame		% (tanθ)	30	30	27
42	Brake	Service (Foot)			Dry Disc	Dry Disc	Dry Disc
43		Parking			Foot	Foot	Foot
45	Battery	Voltage/Capacity (5-hour rating)	STD	V/AH	48/390	48/390	48/390
			High	V/AH	48/565	48/565	48/645
46		Weight (STD Capacity Type)		kg	680	680	690
47	Electric Motors	Drive		kW	4.9x2	4.9x2	4.9x2
48		Load Handling		kW	9.2	9.2	9.2
54	Control Type	Drive			Trasistor inverter	Trasistor inverter	Trasistor inverter
		Load Handling			Trasistor inverter	Trasistor inverter	Trasistor inverter
57	Operating Pressure	For Attachments		Mpa (psi)	13.7 (2000)	13.7 (2000)	13.7 (2000)

NOTE: * Computed values.

DIMENSIONAL DRAWINGS *(June 2015)*

Unit: mm

8FBE15

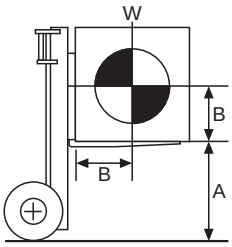


UNDERCLEARANCE

Mast (Full Load)----------	75
Center of Wheelbase (Full Load)----------	80
Drive Axle (Full Load)----------	90
Counterweight (No Load)----------	85
Minimum Under Clearance (No Load)---	60 (Frame)

RATED CAPACITIES *(June 2015)*

8FBE15



A: Max. Fork Height
B: Load Center
W: Capacity

V, FV Mast (PSC)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1500	1500	1500	1500	1500	1500	1500	1370	1270
	600	1340	1340	1340	1340	1340	1340	1340	1230	1140
	700	1210	1210	1210	1210	1210	1210	1210	1110	1030
	800	1110	1110	1110	1110	1110	1110	1110	1010	940
	900	1020	1020	1020	1020	1020	1020	1020	930	860
	1000	940	940	940	940	940	940	940	860	800
	1100	880	880	880	880	880	880	880	800	740
	1200	820	820	820	820	820	820	820	750	700

V, FV Mast (PN)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1500	1500	1500	1500	1500	1500	1500	1350	1250
	600	1340	1340	1340	1340	1340	1340	1340	1210	1120
	700	1210	1210	1210	1210	1210	1210	1210	1090	1010
	800	1110	1110	1110	1110	1110	1110	1110	1000	920
	900	1020	1020	1020	1020	1020	1020	1020	920	850
	1000	940	940	940	940	940	940	940	850	790
	1100	880	880	880	880	880	880	880	790	730
	1200	820	820	820	820	820	820	820	740	690

FSV Mast (PSC)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1500	1400	1400	1350	1350	1220	920	720
	600	1350	1260	1260	1210	1210	1100	830	650
	700	1220	1140	1140	1100	1100	1000	750	590
	800	1120	1050	1050	1010	1010	910	690	540
	900	1030	970	970	930	930	840	630	500
	1000	960	900	900	860	860	780	590	460
	1100	900	840	840	810	810	730	550	430
	1200	840	780	780	760	760	680	510	400

FSV Mast (PN)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1500	1400	1400	1350	1350	1200	900	700
	600	1350	1260	1260	1210	1210	1080	810	630
	700	1220	1140	1140	1100	1100	980	730	570
	800	1120	1050	1050	1010	1010	900	670	520
	900	1030	970	970	930	930	830	620	480
	1000	960	900	900	860	860	770	580	450
	1100	900	840	840	810	810	720	540	420
	1200	840	780	780	760	760	670	500	390

SPECIAL MAST *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

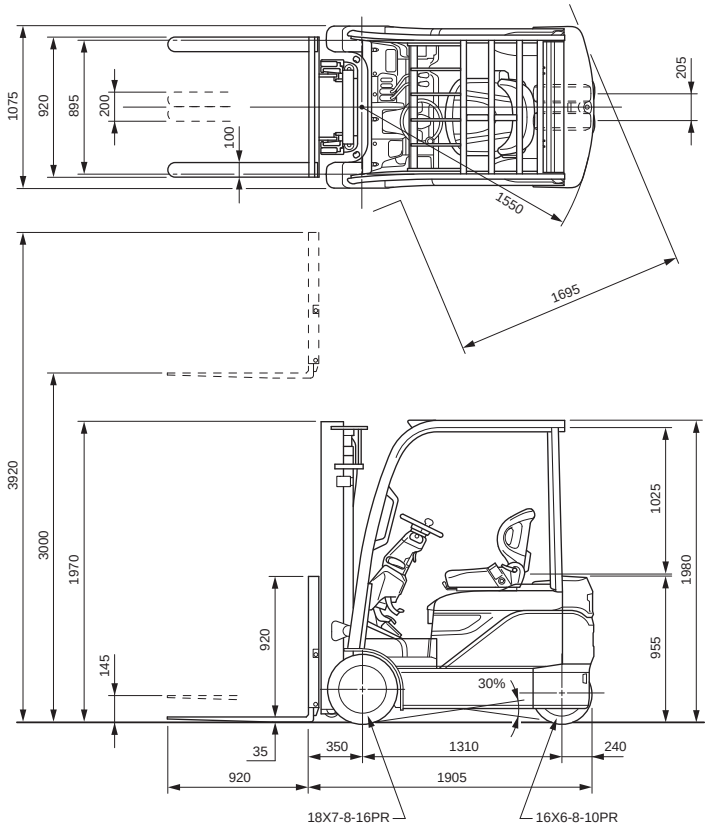
Model				**8FBE15**											
Type of Mast				V				FV				FSV			
PERFORMANCE															
Power Mode				H	P	S	E	H	P	S	E	H	P	S	E
Speeds	Lifting	Full Load	mm/sec	430	350	280	280	420	340	270	270	440	360	280	280
		No Load	mm/sec	610	540	480	480	550	490	440	440	560	500	450	450
	Lowering	Full Load	mm/sec	530	530	530	530	470	470	470	470	490	490	490	490
		No Load	mm/sec	550	550	550	550	460	460	460	460	470	470	470	470
DIMENSIONS															
Load Distance (Centerline of front axle to front face of forks)			mm	350				350				390			

NOTE: H High power mode.
P Power mode.
S Standard mode.
E Eco mode.

DIMENSIONAL DRAWINGS *(June 2015)*

Unit: mm

8FBE18

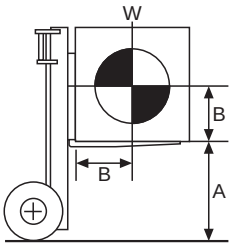


UNDERCLEARANCE

Mast (Full Load)----------	75
Center of Wheelbase (Full Load)----------	80
Drive Axle (Full Load)----------	90
Counterweight (No Load)----------	85
Minimum Under Clearance (No Load)---	60 (Frame)

RATED CAPACITIES *(June 2015)*

8FBE18



A: Max. Fork Height
B: Load Center
W: Capacity

V, FV Mast (PSC)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1750	1750	1750	1750	1750	1750	1720	1570	1320
	600	1570	1570	1570	1570	1570	1570	1540	1400	1180
	700	1420	1420	1420	1420	1420	1420	1390	1270	1070
	800	1290	1290	1290	1290	1290	1290	1270	1160	980
	900	1190	1190	1190	1190	1190	1190	1170	1070	900
	1000	1100	1100	1100	1100	1100	1100	1080	990	830
	1100	1030	1030	1030	1030	1030	1030	1010	920	770
	1200	960	960	960	960	960	960	940	860	720

V, FV Mast (PN)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1750	1750	1750	1750	1750	1750	1700	1550	1300
	600	1570	1570	1570	1570	1570	1570	1520	1390	1160
	700	1420	1420	1420	1420	1420	1420	1380	1260	1050
	800	1290	1290	1290	1290	1290	1290	1260	1150	960
	900	1190	1190	1190	1190	1190	1190	1160	1050	880
	1000	1100	1100	1100	1100	1100	1100	1070	980	820
	1100	1030	1030	1030	1030	1030	1030	1000	910	760
	1200	960	960	960	960	960	960	930	850	710

FSV Mast (PSC)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1600	1600	1550	1400	1400	1320	970	770
	600	1440	1440	1390	1260	1260	1190	870	690
	700	1310	1310	1270	1140	1140	1080	790	630
	800	1200	1200	1160	1050	1050	990	730	580
	900	1100	1100	1070	970	970	910	670	530
	1000	1020	1020	990	900	900	840	620	490
	1100	960	960	930	840	840	790	580	460
	1200	900	900	870	780	780	740	540	430

FSV Mast (PN)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1600	1600	1550	1400	1400	1300	950	750
	600	1440	1440	1390	1260	1260	1170	850	670
	700	1310	1310	1270	1140	1140	1060	780	610
	800	1200	1200	1160	1050	1050	970	710	560
	900	1100	1100	1070	970	970	900	660	520
	1000	1020	1020	990	900	900	830	610	480
	1100	960	960	930	840	840	780	570	450
	1200	900	900	870	780	780	730	530	420

SPECIAL MAST *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

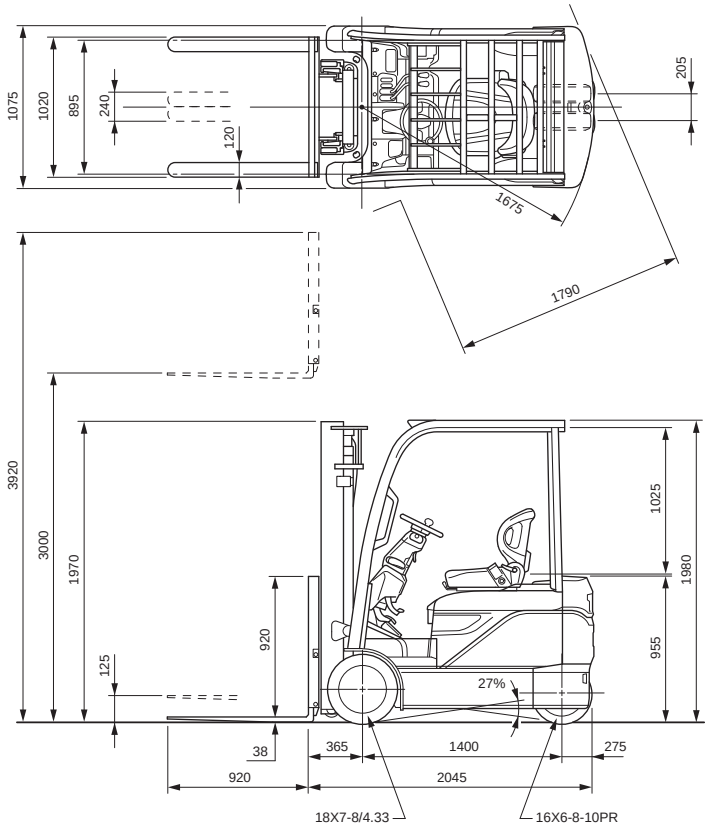
Model				**8FBE18**											
Type of Mast				V				FV				FSV			
PERFORMANCE															
Power Mode				H	P	S	E	H	P	S	E	H	P	S	E
Speeds	Lifting	Full Load	mm/sec	380	320	250	250	400	320	240	240	430	360	270	270
		No Load	mm/sec	610	540	480	480	550	490	440	440	560	500	450	450
	Lowering	Full Load	mm/sec	530	530	530	530	470	470	470	470	490	490	490	490
		No Load	mm/sec	550	550	550	550	460	460	460	460	470	470	470	470
DIMENSIONS															
Load Distance (Centerline of front axle to front face of forks)			mm	350				350				390			

NOTE: H High power mode.
P Power mode.
S Standard mode.
E Eco mode.

DIMENSIONAL DRAWINGS *(June 2015)*

Unit: mm

8FBE20

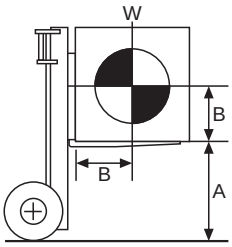


UNDERCLEARANCE

Mast (Full Load)----------	75
Center of Wheelbase (Full Load)----------	80
Drive Axle (Full Load)----------	90
Counterweight (No Load)----------	85
Minimum Under Clearance (No Load)---	60 (Frame)

RATED CAPACITIES *(June 2015)*

8FBE20



A: Max. Fork Height
B: Load Center
W: Capacity

V Mast (PSC)

Unit: kg (**W**)

A (mm)		2500	2700	3000	3300	3500	3700	4000	4500	5000
B (mm)	500	1300	1280	1220	1170	1140	1110	1060	900	700
	600	1180	1160	1110	1070	1040	1020	970	830	640
	700	1080	1070	1020	990	960	940	900	770	600
	800	1000	990	950	910	890	870	840	710	560
	900	930	920	880	850	830	820	780	670	520
	1000	870	860	830	800	780	770	740	630	490
	1100	820	810	780	750	740	720	690	590	470
	1200	770	760	730	710	700	680	660	560	440

FSV Mast (PSC)

Unit: kg (**W**)

A (mm)		3700	4000	4300	4500	4700	5000	5500	6000
B (mm)	500	1140	1070	980	870	840	700	510	290
	600	1050	980	900	800	770	640	470	270
	700	970	910	840	740	720	600	440	250
	800	900	850	780	690	670	560	410	230
	900	840	800	730	650	630	530	390	220
	1000	790	750	690	610	590	500	360	210
	1100	750	710	650	580	560	470	350	200
	1200	710	670	620	550	530	450	330	190

SPECIAL MAST *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

Model				**8FBE20**							
Type of Mast				V				FSV			
PERFORMANCE											
Power Mode				H	P	S	E	H	P	S	E
Speeds	Lifting	Full Load	mm/sec	340	280	220	220	360	300	220	220
		No Load	mm/sec	500	450	400	400	480	420	380	380
	Lowering	Full Load	mm/sec	500	500	500	500	490	490	490	490
		No Load	mm/sec	500	500	500	500	480	480	480	480
DIMENSIONS											
Load Distance (Centerline of front axle to front face of forks)			mm	365				415			

NOTE: H High power mode.
P Power mode.
S Standard mode.
E Eco mode.

MAST SPECIFICATIONS & RATED CAPACITIES *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Two-Stage Mast (FV), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

8FBE15

Mast Type	Maximum Fork Height	Overall Height			Free Lift		Tilt Range		Load Capacity at 500 mm LC	
		Lowered	Extended		Without Load Backrest	With Standard Load Backrest	FWD	BWD	PSC	PN
			Without Load Backrest	With Standard Load Backrest						
	mm	mm	mm	mm	mm	mm	deg	deg	kg	kg
V	2500	1720	3055*	3420	145	145	5	5	1500	1500
	2700	1820	3255*	3620	145	145	5	6.5	1500	1500
	3000	1970	3555*	3920	145	145	5	6.5	1500	1500
	3300	2120	3855*	4220	145	145	5	6.5	1500	1500
	3500	2220	4055*	4420	145	145	5	6.5	1500	1500
	3700	2380	4255*	4620	145	145	5	6.5	1500	1500
	4000	2570	4555*	4920	145	145	5	6.5	1500	1500
	4500	2820	5055*	5420	145	145	5	6.5	1370	1350
	5000	3070	5555*	5920	145	145	5	6.5	1270	1250
FV	3000	1970	3600	3920	1405	1055	5	6.5	1500	1500
	3300	2120	3900	4220	1555	1205	5	6.5	1500	1500
	3500	2220	4100	4420	1655	1305	5	6.5	1500	1500
	3700	2380	4300	4620	1815	1465	5	6.5	1500	1500
	4000	2570	4600	4920	2005	1655	5	6.5	1500	1500
FSV	3700	1770	4275	4620	1225	855	5	6.5	1500	1500
	4000	1870	4575	4920	1325	955	5	6.5	1400	1400
	4300	1970	4875	5220	1425	1055	5	6.5	1400	1400
	4500	2040	5075	5420	1495	1125	5	6.5	1350	1350
	4700	2120	5275	5620	1575	1205	5	6.5	1350	1350
	5000	2220	5575	5920	1675	1305	5	6.5	1220	1200
	5500	2380	6075	6420	1835	1465	5	6.5	920	900
	6000	2570	6575	6920	2025	1655	5	6.5	720	700

NOTE: Height of standard load backrest is 920 mm.
* with A4 piping, plus 85 mm.

8FBE18

Mast Type	Maximum Fork Height	Overall Height			Free Lift		Tilt Range		Load Capacity at 500 mm LC	
		Lowered	Extended		Without Load Backrest	With Standard Load Backrest	FWD	BWD	PSC	PN
			Without Load Backrest	With Standard Load Backrest						
	mm	mm	mm	mm	mm	mm	deg	deg	kg	kg
V	2500	1720	3160*	3420	145	145	5	5	1750	1750
	2700	1820	3360*	3620	145	145	5	6.5	1750	1750
	3000	1970	3660*	3920	145	145	5	6.5	1750	1750
	3300	2120	3960*	4220	145	145	5	6.5	1750	1750
	3500	2220	4160*	4420	145	145	5	6.5	1750	1750
	3700	2380	4360*	4620	145	145	5	6.5	1750	1750
	4000	2570	4660*	4920	145	145	5	6.5	1720	1700
	4500	2820	5160*	5420	145	145	5	6.5	1570	1550
	5000	3070	5660*	5920	145	145	5	6.5	1320	1300
FV	3000	1970	3600	3920	1405	1055	5	6.5	1750	1750
	3300	2120	3900	4220	1555	1205	5	6.5	1750	1750
	3500	2220	4100	4420	1655	1305	5	6.5	1750	1750
	3700	2380	4300	4620	1815	1465	5	6.5	1750	1750
	4000	2570	4600	4920	2005	1655	5	6.5	1720	1700
FSV	3700	1770	4275	4620	1225	855	5	6.5	1600	1600
	4000	1870	4575	4920	1325	955	5	6.5	1600	1600
	4300	1970	4875	5220	1425	1055	5	6.5	1550	1550
	4500	2040	5075	5420	1495	1125	5	6.5	1400	1400
	4700	2120	5275	5620	1575	1205	5	6.5	1400	1400
	5000	2220	5575	5920	1675	1305	5	6.5	1320	1300
	5500	2380	6075	6420	1835	1465	5	6.5	970	950
	6000	2570	6575	6920	2025	1655	5	6.5	770	750

NOTE: Height of standard load backrest is 920 mm.
* with A4 piping, minus 20 mm.

MAST SPECIFICATIONS & RATED CAPACITIES *(June 2015)*

Wide Visible Mast (V), Wide Visible Full-Free Lift Three-Stage Mast (FSV)

8FBE20

Mast Type	Maximum Fork Height	Overall Height			Free Lift		Tilt Range		Load Capacity at 500 mm LC
		Lowered	Extended		Without Load Backrest	With Standard Load Backrest	FWD	BWD	PSC
			Without Load Backrest	With Standard Load Backrest					
	mm	mm	mm	mm	mm	mm	deg	deg	kg
V	2500	1720	3205	3420	125	125	5	5	2000
	2700	1820	3405	3620	125	125	5	6.5	2000
	3000	1970	3705	3920	125	125	5	6.5	2000
	3300	2120	4005	4220	125	125	5	6.5	2000
	3500	2220	4205	4420	125	125	5	6.5	2000
	3700	2380	4405	4620	125	125	5	6.5	2000
	4000	2570	4705	4920	125	125	5	6.5	2000
	4500	2820	5205	5420	125	125	5	6.5	1850
	5000	3070	5705	5920	125	125	5	6.5	1600
FSV	3700	1770	4385	4620	1120	860	5	6.5	2000
	4000	1870	4685	4920	1220	960	5	6.5	1950
	4300	1970	4985	5220	1320	1060	5	6.5	1850
	4500	2040	5185	5420	1390	1130	5	6.5	1700
	4700	2120	5385	5620	1470	1210	5	6.5	1700
	5000	2220	5685	5920	1570	1310	5	6.5	1500
	5500	2380	6185	6420	1730	1470	5	6.5	1250
	6000	2570	6685	6920	1920	1660	5	6.5	900

NOTE: Height of standard load backrest is 920 mm.

8FBE10.13.15.18.20

STANDARD EQUIPMENT *(June 2015)*

8FBE10.13.15.18.20

● Wide Visible Mast (V) [MFH: 3000 mm] ● Load backrest (V and FSV masts) [Height: 920 mm] ● Operator Presence Sensing System (OPS) ● Easy-down system (V mast) ● Power select function ● Power keep function ● ORS seat ● Memory tilt steering column ● Foot Activated parking brake (Release by lever) ● Full hydraulic power steering ● Electric horn ● Battery hood damper ● Floor mat ● Overhead guard ● Drawbar pin ● Display (Battery capacity indicator, Power-select function indicator, OPS indicator, Overheat warning, Low temparature warning, Parking brake warning indicator, Hour meter, Battery overdischarge warning, Battery remaining-charge warning, Parking brake on/off alarm, Return-to-neutral warning, Digital diagnosis, Maximum speed limitation setting, Auto power off time setting)

OPTIONS AVAILABILITY CHART

(June 2015)

●: Available

Item				Code	Model				
					8FBE10	8FBE13	8FBE15	8FBE18	8FBE20
LOAD HANDLING									
Full-Free Lift Two-Stage Mast (FV)	w. Backrest		★	M00F✳	●	●	●	●	
	w/o Backrest		★	M00F✳	●	●	●	●	
Full-Free Lift Three-Stage Mast (FSV)	w. Backrest		★	M00D✳	●	●	●	●	●
Fully Oil Charged Lift Cylinder			☆★	M09A	●	●	●	●	●
Long Forks			☆★	M20A✳	●	●	●	●	●
Sleeved Forks			★	P10A✳	●	●	●	●	●
w/o Fork Set			★	M20N	●	●	●	●	●
Long Forkbar			☆★	M30A	●	●	●	●	●
High Load Backrest (Flat Steel Type)			☆★	M33A	●	●	●	●	
High Load Backrest (Angle Shape Type)			☆★	M40A✳	●	●	●	●	●
w/o Backrest			★	M40N	●	●	●	●	●
High Load Backrest When Ordering FV Mast		1)		M41B	●	●	●	●	●
Tilt Cylinder Boots			★	K11A	●	●	●	●	●
Mast Tilt Indicator				N14A	●	●	●	●	●
BATTERY AND CONTROLLER									
Battery (Wet Cell)		2)	☆★	D00C✳	●	●	●	●	●
Local Battery		3)	☆★	D03C✳	●	●	●	●	●
Spare Battery (Wet Cell)		4)	★	D20A	●	●	●	●	●
Battery Brand (GS Yuasa)			★	D30A	●	●	●	●	●
Battery Brand (Kobe)			★	D30B	●	●	●	●	●
Single Overall Electrolyte Filler Ports			★	D40A	●	●	●	●	●
Battery Protecting Function		5)	★	D42B	●	●	●	●	●
Battery Carrier		6)	★	D45D			●	●	●
Battery Case			☆★	D80B	●	●	●	●	●
Spare Battery Case			☆	D83A	●	●	●	●	●
Battery Roll-Out		7)	★	D56A			●	●	●
Battery Side-Out			★	G25B			●	●	●
Battery Charger 200V/3P (On-Truck Type)			☆★	C30E	●	●	●	●	●
Battery Charger 200V/3P (Off-Truck Type)		8)	☆★	C30L	●	●	●	●	●
Battery Charger 400V/3P (Off-Truck Type)		8)	☆★	C30M	●	●	●	●	●
Battery Connector Cable			★	D55A	●	●	●	●	●
Battery Code Adapter			★	D58A	●	●	●	●	●
LIGHT AND INDICATORS									
Headlights			★	J24A	●	●	●	●	●
LED Head Lights			★	J24L	●	●	●	●	●
Front Combination Lights		9)	★	J20B	●	●	●	●	●
LED Rear Combination Lights			★	J21D	●	●	●	●	●
LED Rear Working Light			★	J26A	●	●	●	●	●
LED Rear Working Light (Selective Lighting Condition)			★	J26C	●	●	●	●	●
Blue Light (Selective Lighting Condition)			★	J44C	●	●	●	●	●
Yellow Beacon On The Overhead Guard			★	J19A	●	●	●	●	●
Yellow Beacon On The Overhead Guard (Key-On Position)			★	J19E	●	●	●	●	●
Yellow Beacon (Separately Attached)			★	J19X	●	●	●	●	●
LED Yellow Beacon On The Overhead Guard			★	J19S	●	●	●	●	●
LED Yellow Beacon On The Overhead Guard (Key-On Position)			★	J19U	●	●	●	●	●
LED Yellow Beacon (Separately Attached)			★	J19V	●	●	●	●	●
Forward & Back-Up Chime			★	K21A	●	●	●	●	●
Back-up Chime			★	K21C	●	●	●	●	●
Back-up Buzzer			★	K21D	●	●	●	●	●
Adjustable-Volume Back-Up Buzzer			★	K21H	●	●	●	●	●
Forward Chime			★	K22A	●	●	●	●	●
Armrest Horn		10)	★	K23D	●	●	●	●	●
Key-less Ignition Switch		11)	★	D29A	●	●	●	●	●
Shock Sensor		12)	★	L39B	●	●	●	●	●
CAN System for Telematics		12)	★	L39C	●	●	●	●	●
PIN Code Entry System		12)	★	L38B	●	●	●	●	●
Multifunction Display			★	L26A	●	●	●	●	●
Deluxe Multifunction Display		13)	★	L26B	●	●	●	●	●
BODY									
12V Power Supply			★	D59B	●	●	●	●	●
Wire Harness for Accessories			★	D61B	●	●	●	●	●
Suspension Seat w / Damper			★	G40E	●	●	●	●	●
Overhead Guard Sheet			★	H01B	●	●	●	●	●
Resin Roof			★	H01E	●	●	●	●	●
Front Windshield w/ Wiper			★	H02H	●	●	●	●	●
Drive-In Rack Overhead Guard			★	H04C	●	●	●	●	●
Right Hand Shift Lever		13)	★	E11B	●	●	●	●	●

Item			Code	Model				
				8FBE10	8FBE13	8FBE15	8FBE18	8FBE20
Mini Lever		★	E45A	●	●	●	●	●
Joystick		★	E45B	●	●	●	●	●
Synchronized Steering		★	E72A	●	●	●	●	●
Individual Key		★	L00A	●	●	●	●	●
Rear-Pillar Assist Grip		★	L37A	●	●	●	●	●
Rear-view Mirrors, Right and Left Sides		★	J10B	●	●	●	●	●
Cup Holder		★	S05B	●	●	●	●	●
Name Plate (English)	14)	★	S31A	●	●	●	●	●
Name Plate (Spanish)	14)	★	S31B	●	●	●	●	●
Name Plate (Chinese)	14)	★	S31C	●	●	●	●	●
Name Plate (French)	14)	★	S31E	●	●	●	●	●
Name Plate (Russian)	14)	★	S31F	●	●	●	●	●
Name Plate (Taiwanese)	14)	★	S31G	●	●	●	●	●
Name Plate (Portuguese)	14)	★	S31K	●	●	●	●	●
Static Strap			K64A	●	●	●	●	●
TOYOTA Symbol Mark			S02A	●	●	●	●	●
Certificated Label		★	S20C	●	●	●	●	●
S.A.S. Equipped Decal	13)	★	S28A	●	●	●	●	●
OPS Decal			S35A	●	●	●	●	●
Body Color (602 Green)		★	R00M	●	●	●	●	●
Body & Forks in One Color (Mast, B/R & ATT in STD Color)		★	R30A	●	●	●	●	●
Body & Forks in Two Colors (Mast, B/R & ATT in STD Color)		★	R30B	●	●	●	●	●
Body & Forks in Three Colors (Mast, B/R & ATT in STD Color)		★	R30C	●	●	●	●	●
Body & Forks in Four Colors (Mast, B/R & ATT in STD Color)		★	R30D	●	●	●	●	●
Mast, B/R & ATT in Specified Color		★	R40A	●	●	●	●	●
Tool, Standard Set (A Set)		★	S00B	●	●	●	●	●
Tool, Standard Set (B Set)		★	S00C	●	●	●	●	●
CHASSIS								
Wide Brake Pedal		★	E32C	●	●	●	●	●
EZ Pedal		★	E43A	●	●	●	●	●
WHEELS AND TIRES								
Pneumatic Tire		☆		●	●	●	●	●
Pneumatic-shaped Cushion Tire		☆		●	●	●	●	●
SPECIAL MODELS								
E.E.C. Spec.	15)	★	A10A	●	●	●	●	●
China Certification Spec.		★	A10R	●	●	●	●	●
E Mark (for EC)	16)	★	A13A	●	●	●	●	●
Australian Spec.	17)	★	A20T	●	●	●	●	●
System of Active Stability -ε	12)	★	A41A	●	●	●	●	●
Cold-storage Model (Type 45S)		★	B30E	●	●	●	●	●
Rust-Proof Model (Fisherman Special)		★	B30F	●	●	●	●	●
Rust-Proof Model		★	B30H	●	●	●	●	●
Mast Rust-Proof Painting		★	R50A	●	●	●	●	●
Backrest Rust-Proof Painting		★	R51A	●	●	●	●	●
ATTACHMENT AND PIPING								
3-Valves, 2 Hose (A410)		★	D601	●	●	●	●	●
4-Valves, 4 Hose (A450)		★	D612	●	●	●	●	●
3-Valves, No Hose (A400)		★	D627	●	●	●	●	●
4-Valves, No Hose (A405)		★	D629	●	●	●	●	●
Hydraulic Fork Shifter (Chain Type) [A331]		★	C002	●	●	●	●	●
Hydraulic Fork Shifter [A351]		★	C006	●	●	●	●	●
Side Shift Fork [E62]		★	D096	●	●	●	●	●
Clamp Release Interlock - 3rd Lever		★	Q15A	●	●	●	●	●
Clamp Release Interlock - 4th Lever		★	Q15B	●	●	●	●	●
Hosing Center Termination		★	Q49A	●	●	●	●	●
Hosing Center and Side Termination		★	Q49B	●	●	●	●	●

NOTE:

1) Must specify M41B for M00F equipped with M40A.
2) Rear tires for 2-ton vehicles with D00C 470, D00C 565, D00C 645 must specify Pneumatic-shaped Cushion Tire.
3) Rear tires for 2-ton vehicles with D03C 470, D03C 565, D03C 645 must specify Pneumatic-shaped Cushion Tire.
4) Only available with the same capacity and brand of the battery chosen by D00C✳.
5) Must specify L26A or L26B. Must specify D00C.
6) Must specify D56A.
7) Please see the “Battery Availability”.
8) Must specify D58A.
9) Must specify J24A orJ24L. Integrated front combination lights are available when J24A is specified.
10) Must specify E45A or E45B.
11) Must specify L38B.
12) Must specify L26A or L26B.
13) Must specify A41A.
14) Please specify S31✳ for all trucks.
15) Must specify A13A and S31A. Must specify for Israel.
16) Must specify A13A and S31A. Must specify for Israel. Unavailable for countries other than specified destinations.
17) Must specify A41A. Must specify G40E or E45A or E45B.

★ Please see the “Matching Options”.

☆ Please see the chart below for the item.

FULLY OIL CHARGED LIFT CYLINDER *(June 2015)*

Model	Mast Type	
8FBE 10.13.15.18	V	●
	FV	●
	FSV	●
8FBE20	V	●
	FSV	●

INDEX: ● Available

MAST INTERCHANGEABILITY *(June 2015)*

Model	Mast Type		
	Wide Visible Mast (V)	Wide Visible Full-Free Lift Two-Stage Mast (FV)	Wide Visible Full-Free Lift Three-Stage Mast (FSV)
8FBE10.13.15.18	●	●	●
8FBE20	●		●

INDEX: ●Interchangeable
NOTE: Only interchangeable with the 8FBE series, not with the previous models.

MAST WEIGHT *(June 2015)*

Mast Type	Maximum Fork Height	Model	
		8FBE 10.13.15.18	8FBE20
	mm	kg	kg
V	2500	320	350
	2700	330	360
	3000	340	390
	3300	370	420
	3500	380	440
	3700	400	460
	4000	440	500
	4500	470	540
	5000	500	570
FV	3000	380	
	3300	390	
	3500	410	
	3700	430	
	4000	470	
FSV	3700	490	530
	4000	500	550
	4300	520	570
	4500	540	590
	4700	550	600
	5000	570	620
	5500	600	650
	6000	660	710

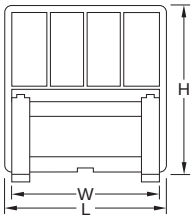
LONG FORKS *(June 2015)*

Unit: mm

Model	Length	Width	Thickness	Long Forks
8FBE10	770	100	30	❍
	850			●
	920			●
	1070			●
	1220		35	●*
8FBE13	850	100	35	❍
	920			●
	1070			●
	1220			●
8FBE15.18	920	100	35	❍
	1070			●
	1220			●
	1370			●
	1520			●
8FBE20	920	120	38	❍
	1070			●
	1220			●
	1370			●
	1520			●

INDEX: ❍ Standard / ● Available
NOTE: * Free Lift and Load Distance, Plus 5 mm.

LONG FORKBAR AND HIGH LOAD BACKREST *(June 2015)*



L: Outside width of load backrest
W: Length of forkbar
H: Height of load backrest

Unit: mm

Model	H	L	1050	1150 (1070)	1300 (1220)	1450 (1370)	1600 (1520)
		W	920	1020	1170	1320	1470
8FBE 10.13.15.18	920		❍	●	●	●	●
	1070		●	●	●	●	●
	1220		●	●	●	●	●
	1370		●				
	1520		●				
	1670		●				
	1820		●				
8FBE20	920			❍	●	●	●
	1070			●	●	●	●
	1220			●	●	●	●
	1370			●			
	1520			●			
	1670			●			
	1820			●			

INDEX: ❍ Standard / ● Available
NOTE: ( ) for 8FBE20

BATTERY AVAILABILITY *(June 2015)*

Model	Battery			
	V	AH/HR	STD	Battery Side-Out
8FBE10.13	48	280/5	●	
		320/5	●	
		370/5	●	
8FBE15.18	48	390/5	●	●
		470/5	●	
		565/5	●	
8FBE20	48	390/5	●	●
		<470/5>	●	
		<565/5>	●*	
		<645/5>	●**	

INDEX: ● Available
NOTE: * Not available to Battery Charger 200V/3P (On-Truck Type) [C30E] for Battery Roll-Out [D56A].
** Not available to Battery Roll-Out [D56A].
< > Rear tires must specify Pneumatic-shaped Cushion Tire.

AVAILABILITY OF BATTERY CHARGER *(June 2015)*

Off-Truck Type (GS YUASA)

Battery Voltage	Battery Capacity	AC input voltage	AC Power Supply Capacity A		kVA of Charger		8FBE10	8FBE13	8FBE15	8FBE18	8FBE20
V	AH/5HR	V	50Hz	60Hz	50Hz	60Hz					
48	280-320	200	20	20	5.4	4.7	●	●			
	370-390	200	30	20	7.3	6.5	●	●	●	●	●
	470-565	200	30	30	9.2	8.1			●	●	●
	645	200	40	40	12.0	11.0					●
	280-320	400	10	10	5.4	4.7	●	●			
	370-390	400	15	10	7.3	6.5	●	●	●	●	●
	470-565	400	15	15	9.2	8.1			●	●	●
	645	400	20	20	12.0	11.0					●

INDEX: ● Available

On-Truck Type

Battery Voltage	Battery Capacity	AC Input Voltage	AC Power Supply Capacity A		kVA of Charger		8FBE10	8FBE13	8FBE15	8FBE18	8FBE20
V	AH/5HR	V	50Hz	60Hz	50Hz	60Hz					
48	280-320	200	15	15	4.3	4.5	●	●			
	370-390	200	20	20	5.7	6.3	●	●	●	●	●
	470-645	200	30	30	7.4	7.6			●	●	●*

INDEX: ● Available
NOTE: * Not available to Battery Charger 200V/3P (On-Truck Type) [C30E] for Battery Roll-Out [D56A] 565AH battery.

TIRE AVAILABILITY *(June 2015)*

Model	Tire Arrangement	Pneumatic Tire				Pneumatic-Shaped Cushion Tire			
		Tire Size	Rim Size (Type)	J-Lug	Rib-Lug	Tire Size	Rim Size (Type)	U-Lug*	J-Lug
8FBE10	Front	18x7-8-10PR	8x4.25DT (Divided)	●	❍	18x7-8/4.33	8x4.25DT (Divided)	●	●
	Rear	15x4.1/2-8-12PR	8x3.00D DT (Divided)	●	❍	15x4.1/2-8/3.00	8x3.00D DT (Divided)	●	●
8FBE13	Front	18x7-8-14PR	8x4.25DT (Divided)	●	❍	18x7-8/4.33	8x4.25DT (Divided)	●	●
	Rear	15x4.1/2-8-12PR	8x3.00D DT (Divided)	●	❍	15x4.1/2-8/3.00	8x3.00D DT (Divided)	●	●
8FBE15	Front	18x7-8-14PR	8x4.25DT (Divided)	●	❍	18x7-8/4.33	8x4.25DT (Divided)	●	●
	Rear	16x6-8-10PR	8x4.25DT (Divided)	●	❍	16x6-8/4.33	8x4.25DT (Divided)	●	●
8FBE18	Front	18x7-8-16PR	8x4.33R TB (Side-Ring)	●	❍	18x7-8/4.33	8x4.33R TB (Side-Ring)	●	●
	Rear	16x6-8-10PR	8x4.25DT (Divided)	●	❍	16x6-8/4.33	8x4.25DT (Divided)	●	●
8FBE20	Front					18x7-8/4.33	8x4.33R TB (Side-Ring)	❍	●
	Rear	16x6-8-10PR	8x4.25DT (Divided)	●	❍	16x6-8/4.33	8x4.25DT (Divided)	●	●

INDEX: ❍ Standard / ● Available
NOTE: * Color tire is available (Green, White).

MATCHING OPTIONS

(June 2015)

(Column figures refer to matching with to the items listed at left)

| Item | Code | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
|---|---|---

| Item | Code | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
|---|---|---

SPECIFICATIONS OF BATTERY AND BATTERY CASE *(June 2015)*

The “minimum weight of battery with case” indicated in the table is the lightest weight of the battery required to satisfy stability requirements of the vehicle in which it is installed.

Specifications (GS YUASA)

Model				8FBE10			8FBE13		
Vehicle Weight without Battery and Case			kg	1675			1875		
Minimum Weight of Battery with Case			kg	520			520		
Battery Connector Type				SB350			SB350		
Minimum Connector Length *			mm	250			250		
Truck Voltage			V	48			48		
Number of Cells			pcs	24			24		
Ampere-Hour Capacity			AH/HR	280/5	320/5	370/5	280/5	320/5	370/5
Specs. of Cell	Overall Dimensions	Total Height	mm	521	521	550	521	521	550
		Container Height	mm	490	490	519	490	490	519
		Length	mm	90	90	90	90	90	90
		Width	mm	158	158	158	158	158	158
	Weight of Filled Cell		Approx. kg	17.0	19.5	21.0	17.0	19.5	21.0
	Quantity of Electrolyte		Approx. liter	3.9	3.7	4.1	3.9	3.7	4.1
Weight	Total (Battery and Case)		kg	560	560	596	560	560	596
Operating Time **				3h30m	4h00m	5h00m	3h25m	3h55m	4h50m

NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.

Specifications (KOBE)

Model				8FBE10			8FBE13		
Vehicle Weight without Battery and Case			kg	1675			1875		
Minimum Weight of Battery with Case			kg	520			520		
Battery Connector Type				SB350			SB350		
Minimum Connector Length *			mm	250			250		
Truck Voltage			V	48			48		
Number of Cells			pcs	24			24		
Ampere-Hour Capacity			AH/HR	280/5	320/5	370/5	280/5	320/5	370/5
Specs. of Cell	Overall Dimensions	Total Height	mm	522	522	522	522	522	522
		Container Height	mm	490	490	520	490	490	520
		Length	mm	90	90	90	90	90	90
		Width	mm	158	158	158	158	158	158
	Weight of Filled Cell		Approx. kg	17.6	19.7	21.3	17.6	19.7	21.3
	Quantity of Electrolyte		Approx. liter	4.2	3.8	4.0	4.2	3.8	4.0
Weight	Total (Battery and Case)		kg	548	572	625	548	572	625
Operating Time **				3h30m	4h00m	5h00m	3h25m	3h55m	4h50m

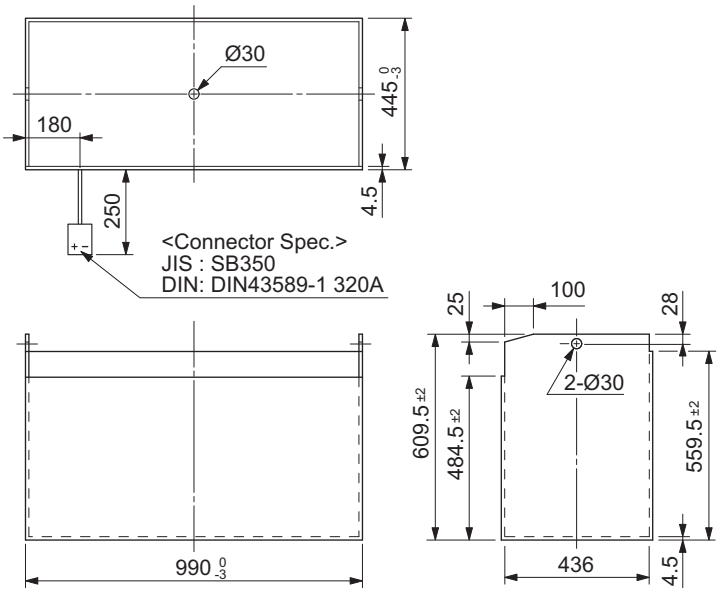
NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.

Dimensions of Battery Case *(June 2015)*

Unit: mm

8FBE10.13

BATTERY CAPACITY : 280AH/5HR, 48V
320AH/5HR, 48V
370AH/5HR, 48V



Dimensions of Battery Compartment

Model		8FBE10.13
Width	mm	998
Length	mm	451
Height	mm	623

SPECIFICATIONS OF BATTERY AND BATTERY CASE *(June 2015)*

The “minimum weight of battery with case” indicated in the table is the lightest weight of the battery required to satisfy stability requirements of the vehicle in which it is installed.

Specifications (GS YUASA)

Model				8FBE15			8FBE18		
Vehicle Weight without Battery and Case			kg	2005			2190		
Minimum Weight of Battery with Case			kg	655			655		
Battery Connector Type				SB350			SB350		
Minimum Connector Length *			mm	250			250		
Truck Voltage			V	48			48		
Number of Cells			pcs	24			24		
Ampere-Hour Capacity			AH/HR	390/5	470/5	565/5	390/5	470/5	565/5
Specs. of Cell	Overall Dimensions	Total Height	mm	521 [522]	550	550	521 [522]	550	550
		Container Height	mm	490	519	519	490	519	519
		Length	mm	109	109	128	109	109	128
		Width	mm	158	158	158	158	158	158
	Weight of Filled Cell		Approx. kg	23.0 [23.5]	27.5	32.0	23.0 [23.5]	27.5	32.0
	Quantity of Electrolyte		Approx. liter	4.5 [4.8]	5.0	5.7	4.5 [4.8]	5.0	5.7
Weight	Total (Battery and Case)		kg	705 [685]	761	869	705 [685]	761	869
Operating Time **				4h50m	6h00m	7h25m	4h25m	5h35m	6h50m

NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.
[ ] for Battery Side-Out [G25B].

Specifications (KOBE)

Model				8FBE15			8FBE18		
Vehicle Weight without Battery and Case			kg	2005			2190		
Minimum Weight of Battery with Case			kg	655			655		
Battery Connector Type				SB350			SB350		
Minimum Connector Length *			mm	250			250		
Truck Voltage			V	48			48		
Number of Cells			pcs	24			24		
Ampere-Hour Capacity			AH/HR	390/5	470/5	565/5	390/5	470/5	565/5
Specs. of Cell	Overall Dimensions	Total Height	mm	522	552	552	522	552	552
		Container Height	mm	490	520	520	490	520	520
		Length	mm	109	109	128	109	109	128
		Width	mm	158	158	158	158	158	158
	Weight of Filled Cell		Approx. kg	23.5	25.8	30.1	23.5	25.8	30.1
	Quantity of Electrolyte		Approx. liter	4.8	4.7	5.8	4.8	4.7	5.8
Weight	Total (Battery and Case)		kg	680 [678]	746	823	680 [678]	746	823
Operating Time **				4h50m	6h00m	7h25m	4h25m	5h35m	6h50m

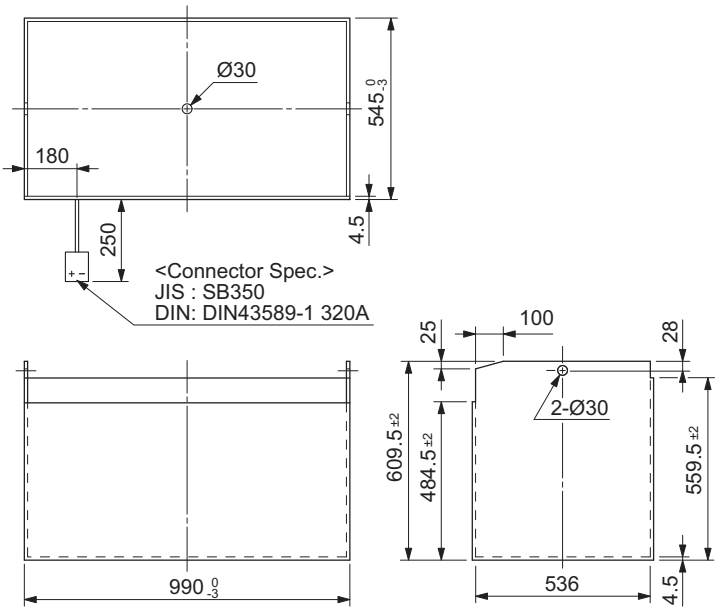
NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.
[ ] for Battery Side-Out [G25B].

Dimensions of Battery Case *(June 2015)*

Unit: mm

8FBE15.18

BATTERY CAPACITY : 390AH/5HR, 48V
470AH/5HR, 48V
565AH/5HR, 48V



Dimensions of Battery Compartment

Model		8FBE15.18
Width	mm	998 (994)
Length	mm	551
Height	mm	623 (592)

NOTE: ( ) for Battery Roll-Out Type [D56A].

SPECIFICATIONS OF BATTERY AND BATTERY CASE *(June 2015)*

The “minimum weight of battery with case” indicated in the table is the lightest weight of the battery required to satisfy stability requirements of the vehicle in which it is installed.

Specifications (GS YUASA)

Model				8FBE20			
Vehicle Weight without Battery and Case			kg	2485			
Minimum Weight of Battery with Case			kg	655			
Battery Connector Type				SB350			
Minimum Connector Length *			mm	250			
Truck Voltage			V	48			
Number of Cells			pcs	24			
Ampere-Hour Capacity			AH/HR	390/5	470/5	565/5	645/5
Specs. of Cell	Overall Dimensions	Total Height	mm	521 [522]	550	550	550
		Container Height	mm	490	519	519	519
		Length	mm	109	109	128	148
		Width	mm	158	158	158	158
	Weight of Filled Cell		Approx. kg	23.0 [23.5]	27.5	32.0	36.5
	Quantity of Electrolyte		Approx. liter	4.5 [4.8]	5.0	5.7	6.8
Weight	Total (Battery and Case)		kg	700 [685]	769	877	985
Operating Time **				4h20m	5h25m	6h40m	7h50m

NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.
[ ] for Battery Side-Out [G25B].

Specifications (KOBE)

Model				8FBE20			
Vehicle Weight without Battery and Case			kg	2485			
Minimum Weight of Battery with Case			kg	655			
Battery Connector Type				SB350			
Minimum Connector Length *			mm	250			
Truck Voltage			V	48			
Number of Cells			pcs	24			
Ampere-Hour Capacity			AH/HR	390/5	470/5	565/5	645/5
Specs. of Cell	Overall Dimensions	Total Height	mm	522	552	552	552
		Container Height	mm	490	520	520	520
		Length	mm	109	109	128	148
		Width	mm	158	158	158	158
	Weight of Filled Cell		Approx. kg	23.5	25.8	30.1	34.2
	Quantity of Electrolyte		Approx. liter	4.8	4.7	5.8	6.6
Weight	Total (Battery and Case)		kg	690 [678]	773	847	930
Operating Time **				4h20m	5h25m	6h40m	7h50m

NOTE: * The distance from case to the tip of the connector.
** The Applied Operating Cycle: Toyota standard 30 m Operating Cycle.
[ ] for Battery Side-Out [G25B].

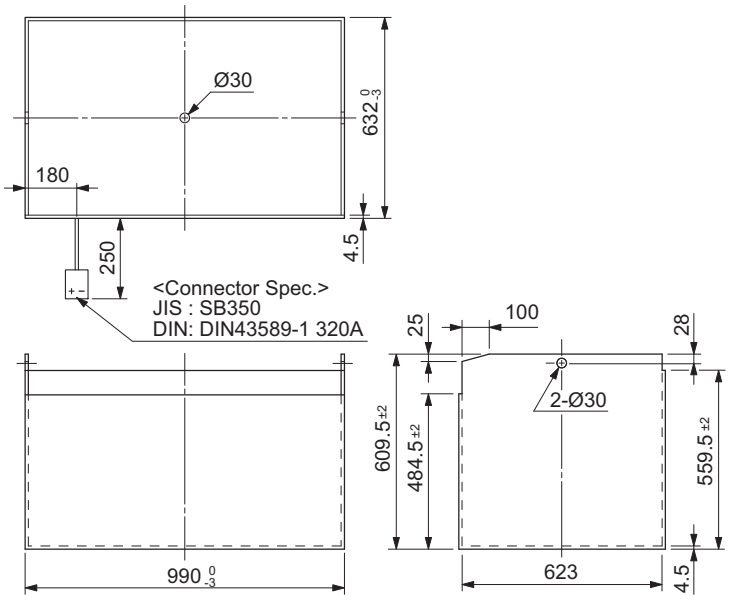
Dimensions of Battery Case

(June 2015)

Unit: mm

8FBE20

BATTERY CAPACITY : 390AH/5HR, 48V
470AH/5HR, 48V
565AH/5HR, 48V
645AH/5HR, 48V



Dimensions of Battery Compartment

Model		8FBE20
Width	mm	998 (994)
Length	mm	638
Height	mm	623 (592)

NOTE: ( ) for Battery Roll-Out Type [D56A].

ENERGY CONSUMPTION

(June 2015)

Energy Consumption (VDI Cycle)

Model	Tested Load	Energy Consumption
	kg	kWh/h
8FBE10	1000	3.2
8FBE13	1250	3.3
8FBE15	1500	3.5
8FBE18	1750	3.8
8FBE20	2000	4.0

NOTE: The energy consumption is measured by VDI Operating Cycle (60 sec.), and may include tolerances of ±10%.