Product guide

Toyota

8FBRE-S

8FBRE12S
8FBRE14S
8FBRE16S

TOYOTA

MATERIAL HANDLING

www.toyota-forklifts.eu

Document revision history:

Edition date	Changes
March, 2014	New series Reach trucks

Part number: 749866-040

Edition: May, 2014

Toyota
Technical Publications - TP
SE-595 81 Mjölby
Sweden

Contents

Reading instructions

This product guide is designed as a point of reference. To facilitate searching for specific features, it has an index at the back. In some cases, information is available in two different chapters. This applies especially to the Sales arguments and Product details chapters describing the various features and benefits of the truck. To determine which chapter provides the desired information, please use the following content descriptions.

The various chapters of this product guide cover the following:

- **Product range information:** Provides a general overview of all truck versions in the series.
- **Applications:** This chapter describes typical customers and truck applications.
- **Sales arguments:** Results from market research carried out during fall 2007 are presented here together with truck features and benefits supporting the sales arguments.
- **Product details:** This chapter offers detailed descriptions of truck features and truck components. It also includes a list of features and benefits.
- **Technical information:** This chapter presents capacity charts, load carriers, battery weights, x measurements, etc.
- **Options:** This is a list of truck options together with a description of their features and benefits.
- **Appendix:** Contains an environmental declaration, a description of environmental work and quality commitment within Toyota as well as a copy of the company's ISO certification

Product range information

Toyota 8FBRE-S reach trucks are designed for low to medium intense horizontal transport and stacking applications and provide all basic functions required. The range comes with 1200, 1400 and 1600 kg capacity and lift heights up to 8500 mm and both duplex tele and triplex hilo masts are available.

As in all Toyota machines the driver is put in focus and the operator cab is fully adjustable, including an adjustable driver compartment floor. All hydraulic functions are fingertip controlled.

Safety is important in all applications and maybe even more so in environments where machines are used a bit infrequent. Toyota 8FBRE-S include features like automatic parking brake, automatic shut of function, pin code start and car pedal layout to support safe usage.

8FBRE12S

- Duplex tele, panoramic view mast with lift height up to 5000 mm.
- Triplex hilo mast with lift height up to 7000 mm.
- Battery capacity from 310 up to 465 Ah.
- Aisle width requirement with short side handled Euro pallet = 2749 mm.

8FBRE14S

- Duplex tele, panoramic view mast with lift heights up to 5000 mm.
- Triplex hilo mast with lift heights up to 8500 mm.
- Battery capacity from 465 up to 620 Ah.
- Aisle width requirement with short side handled Euro pallet = 2749 mm.

8FBRE16S

- Duplex tele, panoramic view mast with lift heights up to 5000 mm.
- Triplex hilo mast with lift heights up to 8500 mm.
- Battery capacity 620 Ah.
- Aisle width requirement with short side handled Euro pallet = 2814 mm.

Operating environment

Processing industries have a variety of material handling situations within their operations. Starting with raw material coming in and processed pieces, often in pallets, going out together with bins containing scrap material. The different load carriers require a machine with reach function. With lift heights and travel distances often being limited and the material handling intensity not being very high this is an ideal application for Toyota 8FBRE-S.

Another environment that is very well suited for Toyota 8FBRE-S are smaller third party logistic companies with low to medium intense goods flow. They do very often handle different size goods and benefit from the flexibility provided by a reach truck.

Sales arguments

To make sure that our Toyota 8FBRE-S reach trucks fulfil the demands from customers that buy this type of machines Toyota carried out a market research with participation from more than 700 respondents in Europe, all of them potential customers. The result points out the following key areas for this kind of truck:

- Safety
- Driveability
- Productivity
- Durability

Safety

There are many aspects of safety that has to be considered when working with fork lift trucks; driver safety, safety in goods handling and safety on the surroundings. For Toyota 8FBRE-S trucks this has resulted in the following main features:

- All around view. Excellent all around view thanks to low front panel, clear view mast, slim front post, the optional rear view mirror and the possibilities to mount VMS equipment on the E-bar.
- PIN code entry system.
- Pedal layout.
- Driver protection.
- Height indicator.

All around view

The all-around visibility is of great importance especially when driving in confined areas or in areas where there is a lot of trucks and people moving.

Feature
Slim front post and low curved edge in front of the driver.

Benefit
The lost visibility area is reduced to a minimum.

Duplex tele mast - panoramic view

Feature
Chains and cylinders placed on the sides.

Benefit
Optimizes operator visibility and make fork positioning safe and easy.

Triplex hilo mast Clear view

Feature
Good overview of load and forks.

Benefit
High productivity and safety in load handling.

Feature
Standing free-lift cylinder.

Benefit
Less hoses and cables that block the view.

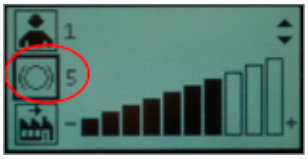
PIN code startup

It is possible to use up to 100 different PIN codes. Those can be connected to maximum 10 different driver profiles with different parameter settings for:

1. Steering sensitivity
2. Top speed drive wheel direction
3. Top speed fork direction
4. Acceleration
5. Brake (retardation)

Parameter setting is easy and is done without any tool.

The example shows parameter setting for retardation.



For more details, please see Technical Information.

Feature
10 different driver profiles and 100 different PIN codes possible.

Benefit
Prohibits unauthorised use of the truck.

Benefit
The performance of the truck can be programmed to suit each individual driver.

Benefit
Programming of driver parameters is done without any tool.

Note! It is possible to prohibit programming without service key if required by customer.

Feature
PIN code entered on key board is used to start up the machine.

Benefit
No key is needed.

Benefit
Easy to change driver parameters connected to the PIN code.

Feature
Driver parameters are shown with symbols and graphics.

Benefit
Easy to see which parameter is displayed and the current setting, facilitates easy change.

Pedals

The pedals have a patterned surface and are carefully designed with regards to height and angle for the best possible ergonomics. The layout is the same as in a car which can be essential for the safety should the driver get into a near-accident situation. The distance between the pedals facilitates driving also with heavy working shoes.

Feature
Pedal layout as in a car.

Benefit
Most truck drivers also drive a car and in an emergency situation the reaction is intuitive therefore this is a safety feature.

Feature
Function monitoring, truck stops if pedals do not work properly.

Benefit
Eliminates risk of accidents (with loss of function).

Feature
Inductive contactless switches.

Benefit
No moving parts lead to high reliability.

Feature
Safety switch in the left foot pedal.

Benefit
Makes sure that the left foot is always within the truck profile.

Rear view mirror

A convex mirror placed on the cab upright. Can be adjusted in height and angle.

Feature
Convex mirror profile.

Benefit
The shape provides excellent angle of view. Makes it possible to see forks, load and rear view. This option is an enhanced safety feature.

Height indication (option)

Shows present lift height, measured from floor to upper side of the forks. Height is displayed in the CID (Central Information Display).

Feature

Measurement and display of height.

Benefit
Not necessary to watch the forks all the way to the top. Reduces the strain on driver's neck, better ergonomics.

Benefit
Makes it easier to find the correct height.

Benefit
Makes it easier to avoid lifting heavy loads higher than permitted according to capacity plate.

Driveability

Focus on ergonomics, comfort and ease of use is an important part of the daily work in design of a new product. The importance of the driver having a comfortable and relaxed drive position without any unnecessary strain on any parts of his body has become a key area increasing in importance with the awareness in the material handling business that this has positive effects on productivity and efficiency.

For the Toyota 8FBRE-S trucks this has lead to:

- Single function levers
- Split control panel
- Fully adjustable operator environment including adjustable floor
- Selection of seats
- Programmable performance

Split control panel

The operator controls are divided in one left hand steering console and one right hand module for the hydraulic functions. This division provides more leg space fore the driver as well as room for additional equipment, for instance PC and keyboard, to be placed in between with excellent access and visibility for the driver.

Fully adjustable operator environment

Feature
All controls and the seats are individually adjustable.

Benefit
Adaptable for each driver. Possible to vary the posture.

Adjustable floor

The operator compartment floor is adjustable and can be fixed in 3 different positions 450-495-540 mm (from floor to seat) to suit drivers of different length. Adjustment is easily done by a service technician loosening 6 bolts. Pedals follow the floor adjustment. Step in height is not changed.

Feature
Adjustable floor.

Benefit
Floor height can be adapted to driver requirements.

Basic seat

The basic seat is available in two versions, one with low backrest and one with high. The seat is fully adjustable.

Comfort seat

The comfort seat is available with low or high back rest and head rest. This seat provide additional adjustment possibilities.

1. Medium backrest, textile.
2. High backrest & headrest, textile.

Feature
Several seats to choose from.

Benefit
Each driver can find a comfortable seat that is suitable for the operation at hand.

Feature
Easy adjustment of seat position, suspension and backrest.

Benefit
Each individual operator can find an ergonomic drive position.

Feature
Several seats to choose from.

Benefit
Each driver can find a comfortable seat that is suitable for the operation at hand.

Feature
Easy adjustment of seat position, suspension and backrest.

Benefit
Each individual operator can find an ergonomic drive position.

Feature
Design of seat bottom and backrest.

Benefit
Good support sideways which gives a comfortable and safe feeling.

Benefit
Slightly sloping outer front edge of the bottom makes it easy to enter and leave the truck. Good support for legs and still a good possibility to move legs and feet.

Feature
Inductive switch for presence control.

Benefit
No moving parts means high reliability.

Feature
Function monitoring of inductive switch, truck stops if switch do not work properly.

Benefit
Eliminates risk of accidents - safety.

Feature
Tilted seat - 4 steps from 5° to 12°.

Benefit
Provides enhanced leg support, mainly for medium tall to tall drivers.

Programmable performance

Truck performance can be programmed to suit each individual driver's requirements or skills or to be adapted to a certain application.

The following parameters can be set without any tool:

- Steering sensitivity
- Top speed drive wheel direction
- Top speed fork direction
- Acceleration
- Brake (retardation)

Feature
10 different driver profiles and 100 different PIN codes possible.

Benefit
The performance of the truck can be programmed to suit each individual driver.

Steering

Toyota 8FBRE-S can be ordered with two steering versions, 180° and 360°. They share the same features when it comes to technical solution.

Feature
Fully electronic steering, adjustable with driver parameters.

Benefit
Steering performance can easily be adjusted to suit different drivers and different applications.

Feature
Progressive steering; the number of steering wheel turns required depend on driving speed.

Benefit
Fast reaction when maneuvering in tight spaces and steady steering when travelling fast.

Feature
Position controlled steering servo with high resolution.

Benefit
No creep motions and fast reaction. Easy to hold a straight line when driving over long distances.

Feature
Steering servo with brush less permanent magnet motor and integrated electronics.

Benefit
High reliability.

From a productivity perspective nothing can be more efficient than 360° steering. However, it requires some learning time. You need a couple of hour's drive time to fully benefit from the advantages.

Therefore in applications with occasional use, 180° may be preferred. 180° steering cannot achieve the same productivity as 360° (even if the driver is very skilled) but it is easier to learn and use the machine.

Feature
360˚ steering.

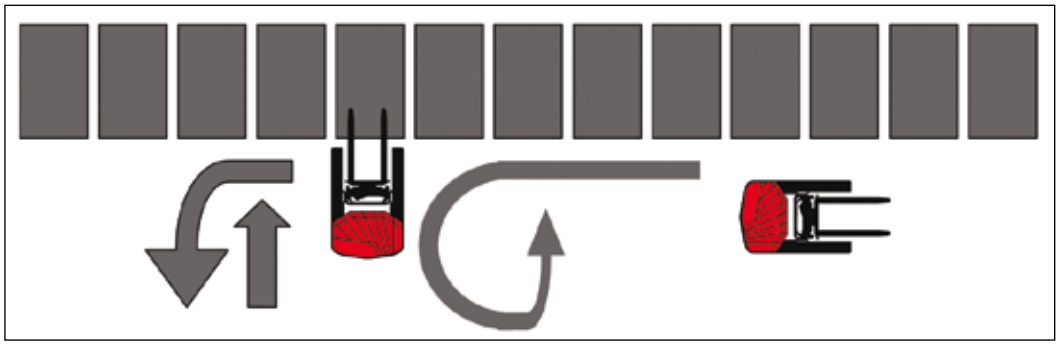
Benefit
Support high productivity.

Feature
180° steering.

Benefit
Easy to learn.

On Toyota 8FBRE-S it is possible to choose between 180° and 360° steering when ordering the machine. Change between the two can be done by a service technician moving a sensor and changing a software parameter.

For short term rental machines and demo units we recommend 180° since rebuilding from that version is easier.



180° steering;
Stop – change direction – start

360° steering;
Continuous movement without stop

Productivity

Productivity demands differ a lot between different applications and the question is; what productivity level is required in a certain application?

Toyota 8FBRE-S provide excellent productivity in applications where the truck is a tool, where usage is not continuous, but more occasional or in specific part of a shift, when travel distances and lift heights are limited, and in a lot of cases also where space is limited.

If a customer works in an application with continuous, high intensity usage, long travel distances and height lift heights we have Toyota 8FBRE-S S-, R- and E-series to offer. Toyota 8FBRE-S provide relevant productivity level for a lot of customers and their applications.

Main productivity features are:

- Lift heights up to 8500 mm
- Low energy consumption
- Drive speed 10 km/h
- 360˚ steering

Lift heights up to 8500 mm

Feature
Duplex tele and triplex hilo masts.

Benefit
Wide and flexible mast offer for different applications.

Low energy consumption

With low energy consumption more pallets can be handled per charge it also means that the energy cost for charging is reduced.

Feature
Low energy consumption.

Benefit
More pallets handled per charge.

Drive speed 10 km/h

Programmable performance make it possible to adapt Toyota 8FBRE-S machines to suit different application needs.

Feature
Powerful drive and acceleration.

Benefit
Enhance good productivity level.

360˚ steering

Feature
Continous 360 steering

Benefit
No start and stop support productivity in driving

Durability

A high quality level results in low costs for maintenance and reduction in necessary maintenance and service time. We have focused on service intervals and reduction of downtime and as a result of that a reduction of the life time cost for the products.

- Gear box dimension
- Large drive wheel
- Leak-free hydraulic connections
- MQS contacts
- All harnesses and contacts are well fixed into the machine body
- 500 h service interval

Gear box dimension/load capability

The dimension and load capability of the gear box is well in line with the demands for this kind of product.

Feature
High performance gear box.

Benefit
Higher durability and reduced wear and tear for long life time.

Large drive wheel

Drive wheel dimensions, both diameter and width, are chosen to provide a durable wheel that also provide maximum comfort with low vibration levels to the driver.

Feature
Large drive wheel, diameter 330 mm.

Benefit
High wear capability.

Benefit
Offer a smooth ride over uneven surfaces.

Hydraulics

The hydraulic system has been designed to use few components and connection points. Quick connections are used to minimize leakage. For productivity and durability reasons this is important since a common cause for repairs in machines of conventional hydraulic design is leakage.

Feature
Few connection points.

Benefit
Reduced leakage risk.

Hydraulic oil and oil filter

During a normal product life time the hydraulic oil does not have to be changed and the oil filter has a change interval of 5000 hours

Since some countries have restrictions on how much oil you can bring without a special permission this will make the service engineers life a lot easier. This is also important from an environmental care point of view.

Feature
Life time hydraulic oil.

Benefit
Reduced maintenance need.

Benefit
Less oil waste – good for the environment.

Feature
Change of hydraulic oil filter after 5000 hours.

Benefit
Reduced maintenance need.

Hydraulic quick connections

Assembly is done without tools and parts position is determined by the connection itself. No risk of damaged threads causing insufficient sealing of connection.

Feature
Reduced leakage risk.

Benefit
High reliability.

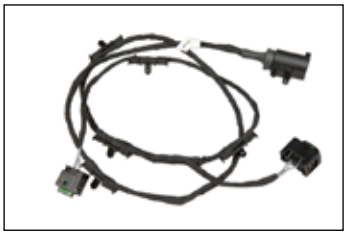
MQS contacts

MQS contacts, with four instead of two contact areas, are used everywhere. They are also mechanically and electrically separated to handle vibrations without causing function disturbances.

Feature
MQS contacts.

Benefit
Safe and reliable communication also in tough environments.

Controlled position of harnesses



All cable harnesses are very thorough fixed with cable brackets, tape or channels. This minimizes the risk of damages due to vibrations or mistakes in assembly.

Feature
All cables are very well fixed.

Benefit
Increased reliability with reduced risk of damages and break downs.

Parking contacts

Some harnesses are prepared for options and when these options are not used the contacts are placed in “parking contacts” to avoid that they are damaged and cause disturbances in the electrical system when unused.

Feature
Parking contacts.

Benefit
Reduced downtime and easier retro fitting of options.

500 h Service

Feature
500 h service interval.

Benefit
Reduced maintenance cost for the customer.

Product details

Driver's compartment (Drive unit)

The Toyota 8FBRE-S range comes with different cabs depending on customer requirements. They are all spacious and welcoming and the operator is well protected. All surfaces in the drivers' compartment are covered with textile or interior panels.

The following versions are available:

- Standard
- Drive in rack

Standard cab

An open operator compartment suitable for all applications.

Drive in rack

The upper part of the chassis is narrowed to enable driving inside the racking.

Model	a: mm	b: mm
8FBRE12S-16S	Max. 1420	Max. 1520

Feature
Narrow upper chassis.

Benefit
Enables use in drive in applications.

Limitations:

- Paper storage compartment is not included.
- Can not be ordered with rear view mirror or paper clip.

Operator environment

Ergonomics and comfort is of utmost importance to provide the best conditions for the driver so that peak performance can be maintained throughout the working day. The possibility to adjust controls, seat etc is essential to find a relaxed position and minimise fatigue and strain on the operator. It all ends up to high performance and less personal injury. The entire compartment is embedded with textile, cushions or plastic panels which give a warm and welcoming feeling.

Feature
Compartment interior covered with textile, cushions or panels.

Benefit
No sharp edges or cold metal surfaces that can discomfort the driver.

Feature
The compartment provides generous space for operator feet and legs.

Benefit
Provides a possibility to have different leg and foot positions to be able to work longer without being tired.

Feature
All controls and the seats are individually adjustable.

Benefit
Adaptable for each driver. Possible to vary the posture.

Adjustable floor

The operator compartment floor is adjustable and can be fixed in 3 different positions 450-495-540 mm (from floor to seat) to suit drivers of different length. Adjustment is easily done by a service technician loosening 6 bolts.Pedals follow the floor adjustment. Step in height is not changed.

Benefit
Adjustable floor.

Feature
Floor height can be adapted to driver requirements.

In (and out) step

A great number of accidents with fork lift trucks are related to foot injuries coming from when stepping in and out of the truck. Therefore the design of the foot step is important in order to reduce this kind of accidents. A low and open step reduces the strain on driver legs and knees and the probability of e.g. spraining the ankle when stepping in or out of the truck.

Feature
Low in (and out) step: 379 mm.

Benefit
Reduces strain on driver legs and knees.

Feature
Generous space on foot step.

Benefit
Safe to step in and out of the cabin also with heavy working shoes.

Feature
Foot step visible when stepping out of the machine.

Benefit
Minimizes risk of foot injuries such as sprains.

Feature
Foldable steering console.

Benefit
Spacious area to step into in the cab.

Feature
Comfortable grip on front post.

Benefit
Can be used as a handle when entering and leaving the machine.

Seat

Feature
Several seats to choose from.

Benefit
Each driver can find a comfortable seat that is suitable for the operation at hand.

Feature
Easy adjustment of seat position, suspension and backrest.

Benefit
Each individual operator can find an ergonomic drive position.

Feature
Inductive switch for presence control.

Benefit
No moving parts means high reliability.

Feature
Function monitoring of inductive switch, truck stops if switch do not work properly.

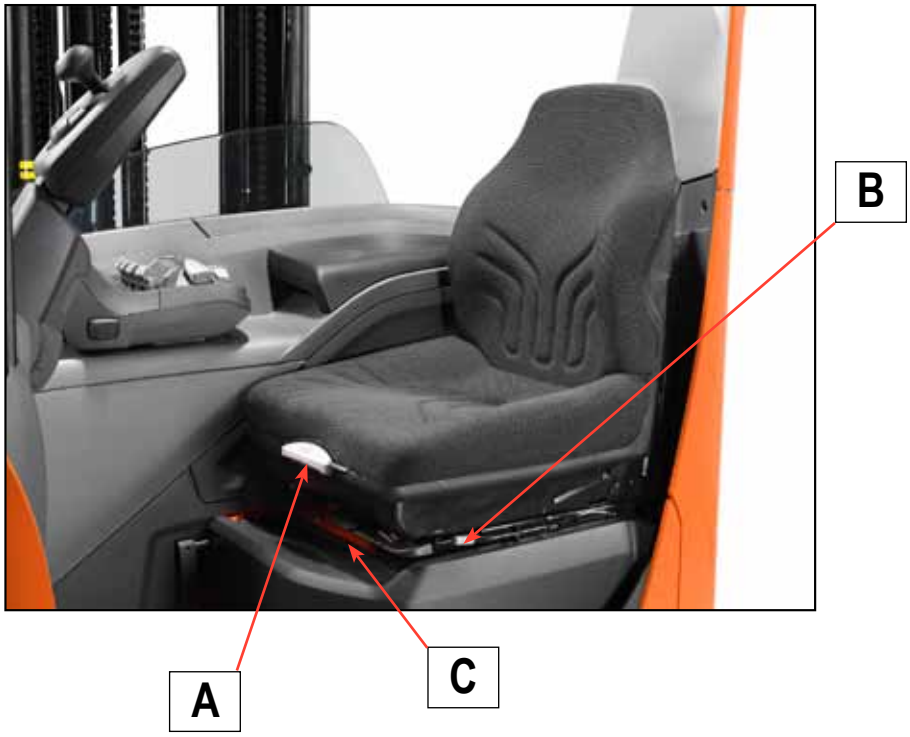
Benefit
Eliminates risk of accidents - safety.

Basic seat

The basic seat is available in two versions, one with low backrest and one with high. The seat is fully adjustable.

The seat has exemplary ergonomics. The seat back height and side supports are optimally shaped, while the seat cushion has a unique Toyota design for optimum comfort. For maximum comfort, the seat can be adjusted forwards and backwards and the seat back angle is freely adjustable.

Adjustment of basic seat



A seat for all applications recommended where the fixed operator compartment is used. Provides comfort to the driver with good support of legs and lower part of the back.

- Lift up the lever (A) while sliding the seat forwards/backwards to adjust the seat back angle.
- Pull out the lever (B) to release the catch and then adjust the forward/backward position of the seat.
- The seat's spring pressure can be adjusted according to the operator's weight.
- Set the seat's spring pressure with the lever (C). Perform this setting with an empty seat. Pull out the lever until the indicated weight corresponds to that of the operator. To reset, pull out the lever fully and allow it to return. Use the scale as a reference when adjusting the spring pressure.

Comfort seat

The comfort seat is available with low or high back rest and head rest. This seat provide additional adjustment possibilities. .

1. Medium backrest, textile.
2. High backrest & headrest, textile.

Medium backrest seat

A seat for all applications recommended where the fixed operator compartment is used. Provides comfort to the driver with good support of legs and lower part of the back.

High backrest seat with headrest

A seat for all applications that provide additional comfort for the driver and in addition to the good support of legs and lower part of the back also include a lumbar support and the comfortable neck rest for additional comfort when handling loads on high lift heights.

Feature
Design of seat bottom and backrest.

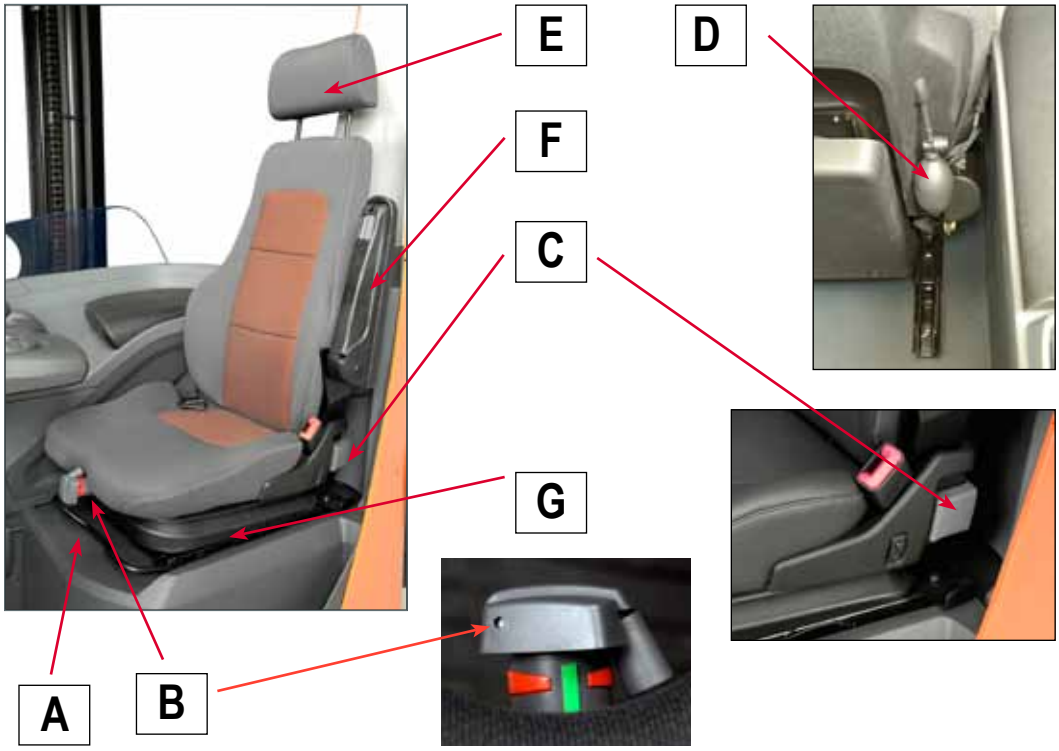
Benefit
Good support sideways which gives a comfortable and safe feeling.

Benefit
Slightly sloping outer front edge of the bottom makes it easy to enter and leave the truck. Good support for legs and still a good possibility to move legs and feet.

Feature
Tilted seat - 4 steps from 5° to 12°.

Benefit
Provides enhanced leg support, mainly for medium tall to tall drivers.

Adjustment of comfort seat



A: Lift the shackle to adjust the seat forwards/backwards

B: Adjust suspension by turning the wheel lever until the indication is green. The suspension is designed for driver weights of 50 – 130 kg

C: Adjustment of backrest

D: Pump for lumbar support is found behind the seat (high backrest only)

E: Headrest is adjustable in height

F: Adjustment of the angle of the optional armrest

G: Seat tilt lever

Note! Moveable seat cushion. The seat cushion has two assembly positions. Machines are delivered with the cushion in the rear position and can be moved to the forward position by a server technician. We recommend the orginal position for short drivers and the forward position for medium tall to tall drivers.

Elbow cushion

Support for the driver's right arm. It gives good support for the arm and relieves the neck and shoulder when using the hydraulic controls and when driving over longer distances.

Feature
Soft and comfortable elbow cushion.

Benefit
Provides support for the drivers arm.

Benefit
Reduces strain on driver neck, arm and shoulders thanks to the possibility to have a relaxed position and this in turn make it possible to work longer without being tired.

Finger guard

Feature
The transparent ABS guard is placed on mast side of the operator cabin.

Benefit
Protects the operator from damage on hands or fingers from mast and battery movements.

Storage compartments

There are several storage compartments on the Toyota 8FBRE-S machines; one for pencils and other small items in the knee panel, one a bit larger on top of the panel that is suitable for tape, cutters, bottles or mobile phone and one paper compartment behind the driver seat.

Feature
Storage compartments.

Benefit
Provide possibility to have items needed during the work day or personal items close at hand.

Main components and controls

1. Steering console
2. Operating console with hydraulic controls, keypad and display for main functions.
3. Seat
4. Pedals
5. Emergency switch

Operator controls

The operator controls are divided in one left hand steering console and one right hand module for the hydraulic functions. This division provides more leg space fore the driver as well as room for additional equipment, for instance PC and keyboard, to be placed in between with excellent access and visibility for the driver.

Start access

The truck is started with standard Pin code log-on and the system protect the truck from unauthorized use.

Start with PIN code

- Press your PIN code
- Push green button

It is possible to use up to 100 different PIN codes. Those can be connected to maximum 10 different driver profiles with different parameter settings for:

- Steering sensitivity
- Top speed drive wheel direction
- Top speed fork direction
- Acceleration
- Brake (retardation)

Parameter setting is easy and is done without any tool.

The first drive parameter i.e. steer progressive has possibilities to have individual setting for high and low drive speeds.

The example shows parameter setting for retardation.

For more details, please see Technical Information.

Feature
10 different driver profiles and 100 different PIN codes possible.

Benefit
Prohibits unauthorised use of the truck.

Benefit
The performance of the truck can be programmed to suit each individual driver.

Benefit
Programming of driver parameters is done without any tool.
Note! It is possible to prohibit programming without service key if required by customer.

Feature
PIN code entered on key board is used to start up the machine.

Benefit
No key is needed.

Benefit
Easy to change driver parameters connected to the PIN code.

Feature
Driver parameters are shown with symbols and graphics.

Benefit
Easy to see which parameter is displayed and the current setting, facilitates easy change.

Display with key board

The display and the symbols give valuable information to the operator.

1. Parking brake active
2. Drive direction forward (traction direction)
3. Stop, indication when truck is stopped due to critical error
4. Warning, there is an active warning and one or more functions are blocked

5. Drive direction back (fork direction)
6. Low battery, flash when <10% and permanently lit when 0 point is reached
7. Battery indicator
8. Steering indicator
9. Clock

The display can also show additional information (button “i”) such as running hours, error codes etc. For more information, please see section Technical information and the Operators Manual.

Feature
Display with keyboard.

Benefit
All information and communication gathered in one place.

Feature
Symbols for different functions.

Benefit
Quickly and easily displayed.

Feature
Multifunction keyboard.

Benefit
Start up of truck and programming of performance is done through the same easy to understand keyboard.

Hydraulic controls

Lots of effort have been put into accomplish a fast, smooth and precise control of all hydraulic movements.

Length positioning of the control is easily done by the driver.

Feature
Adjustment forwards/backwards.

Benefit
Comfortable position for all drivers.

Feature
Proportional hydraulic control.

Benefit
Fast, yet safe and smooth load handling.

Right hand module with single function levers

There are maximum four levers.

1. Lift/lowering
2. Mast function
3. Fork tilt
4. Sideshift
5. Travel direction
6. Horn
7. Travel direction
8. Horn
9. Lift height limitation with override
10. Head lights

Feature

Joy stick grip for finger tip is angled and the surface is structured.

Benefit

Comfortable and easy, effortless fingertip control.

Feature

Placement and layout of hydraulic controls.

Benefit

Very low effort and only small hand and arm movements.

Benefit

Reduces strain on operators hand and arm which in turn enhance productivity.

Direction switch

Travel direction is selected with a hand switch. The selected direction is shown in the display.

Feature

Ergonomic thumb grip.

Benefit

Very comfortable and easy to use.

Feature

The travel direction switch is placed in immediate connection to the hydraulic controls.

Benefit

Accessible without moving the hand from the controls.

Feature

Creep speed function; press the switch for approximate 1 second to move the machine in creep speed. A short beep inform that the function is active. Function can be turned off with a service parameter.

Benefit

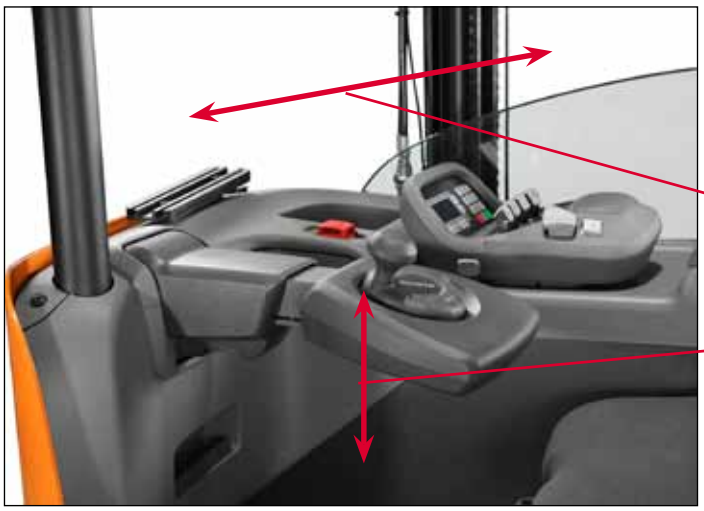
Suitable to use to “crawl” towards the rack for instance when handling fragile goods.

Steering console

The steering is progressive to provide faster response at low speeds and stable travel at higher speed. The signals from the steering wheel have very high resolution for perfect control.

The steering console can be adjusted in three directions; forward/backward, up/down and in angle.

It can also be folded up allowing easy step in/out of the truck.



Feature
Steering wheel adjustment.

Benefit
Very easy to find a comfortable position.

Benefit
The adjustment remains when the steering wheel is folded up for stepping in and out of the cab.

Feature
Wrist support around the steering wheel.

Benefit
Provides a rest position for the arm and reduces strain on arm, neck and shoulders.

Feature
Spinner.

Benefit
Steady grip, easy to turn both in high and low speeds.

Feature
Steering wheel diameter 105 mm.

Benefit
Only small circular movements required to control the machine.

Feature
Steering wheel placement, with left arm inside the truck profile.

Benefit
Reduced risk of driver injuries.

Feature
Steering wheel placement, also possible to steer with the right hand.

Benefit
Possibility to have a varied driving position and avoid static loads on arm and hand.

Feature
Steering performance with high accuracy provides excellent driving experience.

Benefit
The smooth and pliable control of the machine makes it possible to drive for longer periods without being tired.

Programmable performance

Truck performance can be programmed to suit each individual driver's requirements or skills or to be adapted to a certain application.

The following parameters can be set without any tool:

- Steering sensitivity
- Top speed drive wheel direction
- Top speed fork direction
- Acceleration
- Brake (retardation)

Feature
10 different driver profiles and 100 different PIN codes possible.

Benefit
The performance of the truck can be programmed to suit each individual driver.

Steering

Toyota 8FBRE-S can be ordered with two steering versions, 180° and 360°. They share the same features when it comes to technical solution.

Feature
Fully electronic steering, adjustable with driver parameters.

Benefit
Steering performance can easily be adjusted to suit different drivers and different applications.

Feature
Progressive steering; the number of steering wheel turns required depend on driving speed.

Benefit
Fast reaction when maneuvering in tight spaces and steady steering when travelling fast.

Feature
Position controlled steering servo with high resolution.

Benefit
No creep motions and fast reaction. Easy to hold a straight line when driving over long distances.

Feature
Steering servo with brush less permanent magnet motor and integrated electronics.

Benefit
High reliability.

From a productivity perspective nothing can be more efficient than 360° steering. However, it requires some learning time. You need a couple of hour's drive time to fully benefit from the advantages.

Therefore in applications with occasional use, 180° may be preferred. 180° steering cannot achieve the same productivity as 360° (even if the driver is very skilled) but it is easier to learn and use the machine.

Feature
360˚ steering.

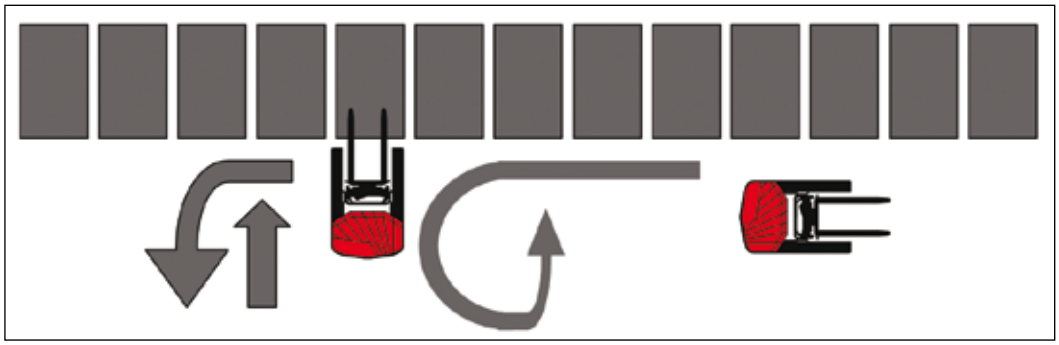
Benefit
Support high productivity.

Feature
180° steering.

Benefit
Easy to learn.

On Toyota 8FBRE-S it is possible to choose between 180° and 360° steering when ordering the machine. Change between the two can be done by a service technician moving a sensor and changing a software parameter.

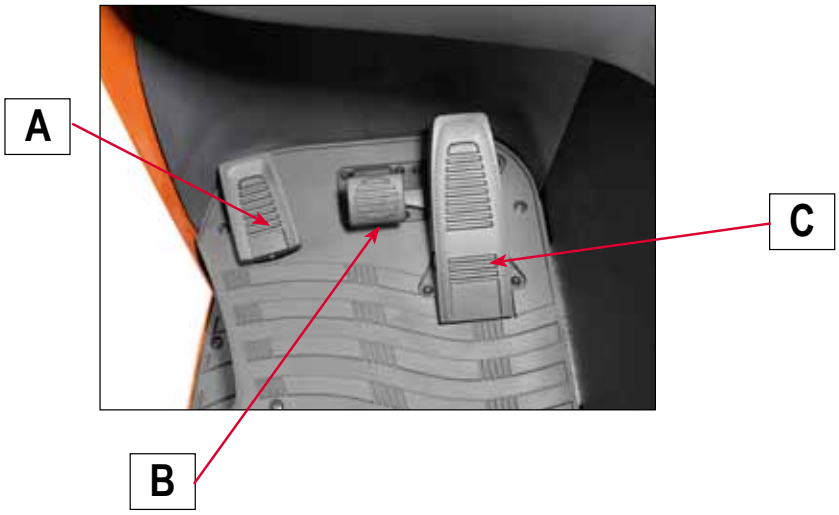
For short term rental machines and demo units we recommend 180° since rebuilding from that version is easier.



180° steering;
Stop – change direction – start

360° steering;
Continuous movement without stop

Pedals



The pedals have a patterned surface and are carefully designed with regards to height and angle for the best possible ergonomics. The layout is the same as in a car which can be essential for the safety should the driver get into a near-accident situation. The distance between the pedals facilitates driving also with heavy working shoes.

Safety pedal (A)

For safety reasons the left foot must always be inside the truck profile when driving to prevent foot injuries if you drive towards an obstacle. This is a normative requirement and to fulfil this we have the left foot safety pedal that need to be activated when driving. If the pedal is not activated there is a signal and the truck is stopped.

Travel brake (B)

When driving, the motor brake (i.e. auto brake by releasing the accelerator) is normally used for speed reduction. For faster stop, the brake pedal is used. The brake force is varied with the applied pressure on the pedal. If the brake pedal is pushed when the truck is standing still the parking brake is activated.

Accelerator (C)

Travel speed depends on the applied pressure (angle) on the pedal. When travel direction is selected and the accelerator is activated the parking brake is automatically released. When the accelerator is released the motor brake is activated. The function is progressive, that is the higher driving speed the more powerful brake force and also more brake force the more the accelerator is released. The motor brake force is programmable.

Feature
Pedal layout as in a car.

Benefit
Most truck drivers also drive a car and in an emergency situation the reaction is intuitive therefore this is a safety feature.

Feature
Function monitoring, truck stops if pedals do not work properly.

Benefit
Eliminates risk of accidents (with loss of function).

Feature
Inductive contactless switches.

Benefit
No moving parts lead to high reliability.

Feature
Safety switch in the left foot pedal.

Benefit
Makes sure that the left foot is always within the truck profile.

Emergency switch off, ESO

In an emergency the switch is easy to reach from driver's position. The switch is also easy accessible from outside the cab.

Feature
Placed on the right hand side.

Benefit
Since steering is normally done with the left hand it is possible to steer the machine in an emergency situation.

Electrical system

Emergency drive function

If driving is shut of due to an error code there is still a possibility to move the truck with an emergency drive function where the machine moves in creep speed. This function is activated via the key pad.

Feature
Emergency drive function.

Benefit
Possible to move the machine to a position where it does not interfere with daily business when waiting for service.

100% brush less motors

All the different motors in the Toyota 8FBRE-S machines; drive motor, lift motor, servo motor, fan motors, are of brush less type.

Feature
Brush less motors

Benefit
Maintenance free; no carbon brushes need changing

AC technology

Feature
AC technology

Benefit
Facilitates high performance and low maintenance costs.

Benefit
Possibility to control performance and have performance virtually unaffected by load.

Feature
Regenerative braking.

Benefit
Longer usage time per battery charge.

Electric boxes

Feature
Sealed boxes for electronic cards.

Benefit
Low risk of moist damaging the card with loss of functions as a result.

Feature
Gore-tex filter on electric boxes.

Benefit
The box can breathe to avoid moist caused by temperature differences.

Sensors

Feature
All contactless sensors without moving parts.

Benefit
High reliability.

MQS contacts

MQS contacts, with four instead of two contact areas, are used everywhere. They are also mechanically and electrically separated to handle vibrations without causing function disturbances.

Feature
MQS contacts.

Benefit
Safe and reliable communication also in tough environments.

Controlled position of harnesses

All cable harnesses are very thorough fixed with cable brackets, tape or channels. This minimizes the risk of damages due to vibrations or mistakes in assembly.

Feature
All cables are very well fixed.

Benefit
Increased reliability with reduced risk of damages and break downs.

Parking contacts

Some harnesses are prepared for options and when these options are not used the contacts are placed in “parking contacts” to avoid that they are damaged and cause disturbances in the electrical system when unused.

Feature
Parking contacts.

Benefit
Reduced downtime and easier retro fitting of options.

Automatic parking brake

Fully automatic parking brake that applies when the driver leaves the truck and releases when travel direction is chosen and the accelerator is pressed. This is a unique Toyota solution. The parking brake can also be activated manually by the operator by pressing the brake pedal in standstill.

Feature
Fully automatic function.

Benefit
Convenient and safe for the driver, safe operation.

Reach movement

The high reach speed movement is still smooth and the risk of damaging goods and racking is reduced to a minimum.

Feature
High speed, soft reach movement.

Benefit
Smooth positioning of forks and load and reduced damage risk.

Benefit
High overall handling speed and productivity.

Cylinder sealing's

High quality sealing materials are used in all lift cylinders.

Feature
Sealing material is flexible down to -40˚C.

Benefit
Reduced leakage risk and high reliability.

Hydraulic quick connections

Assembly is done without tools and parts position is determined by the connection itself. No risk of damaged threads causing insufficient sealing of connection.

Feature
Reduced leakage risk.

Benefit
High reliability.

Hydraulic oil and oil filter

During a normal product life time the hydraulic oil does not have to be changed and the oil filter has a change interval of 5000 hours

Since some countries have restrictions on how much oil you can bring without a special permission this will make the service engineers life a lot easier. This is also important from an environmental care point of view.

Feature
Life time hydraulic oil.

Benefit
Reduced maintenance need.

Benefit
Less oil waste – good for the environment.

Feature
Change of hydraulic oil filter after 5000 hours.

Benefit
Reduced maintenance need.

Productivity

Described earlier is the programmable performance which makes it possible to achieve the optimum performance characteristics for each driver and application. Productivity demands differ a lot between different applications and the question is; what productivity level is required in a certain application?

Toyota 8FBRE-S provide excellent productivity in applications where the truck is a tool, where usage is not continuous, but more occasional or in specific part of a shift, when travel distances and lift heights are limited, and in a lot of cases also where space is limited.

If a customer works in an application with continuous, high intensity usage, long travel distances and height lift heights we have Toyota 8FBRE to offer. Toyota 8FBRE-S provide relevant productivity level for a lot of customers and their applications.

Main productivity features are:

- Lift heights up to 8500 mm
- Low energy consumption
- Drive speed 10 km/h
- 360˚ steering

Feature
Programmable performance.

Benefit
The truck can be adapted to each drivers or applications capability and demands for best possible handling – productivity and safety.

Feature
Low energy consumption.

Benefit
More pallets handled on one charge, reduced energy cost.

Drive unit and motor

Drive wheel

All models have large drive wheel for high durability and life time.

Feature
Drive wheel diameter is 330 mm.

Benefit
Long usage time and less service required.

Drive motor size

Feature
Powerful drive motor.

Benefit
Dimensioned for intended usage with high reliability.

Brake function

Feature
Adjustable brake function.

Benefit
Can be adapted to the application and the load handled or to driver requirements.

Gear box dimension/load capability

The dimension and load capability of the gear box is well in line with the demands for this kind of product.

Feature
High performance gear box.

Benefit
Higher durability and reduced wear and tear for long life time.

Gear box oil

Gear box oil only need to be changed once, after 1000 hours.

Benefit
Reduced maintenance.

Benefit
Less oil waste – good for the environment.

Battery – battery compartment

For each model there are one or two different battery compartments to choose from. For availability, see table in Technical information. The size of the battery effects possible working time between charges.

Machine specifications and battery sizes can be combined to suit different customer requirements.

Feature
Battery plug.

Benefit
Easy accessible for charging from the outside of the machine, easy to pull out with no restricting cables, no risk for hand injuries.

Feature
Battery cables in cable protection.

Benefit
Well protected, reduced risk of damage.

Battery reach out

To reach out the battery two keys on the mast carrier must be folded up. The battery is released with a small pedal in the operator compartment and the reach function is used to reach out the battery.

Battery fitting

The battery is fitted directly on the support arms and can easily be reached out for inspection and maintenance. Battery change is done upwards. As an option the machine can be equipped with rollerbed for sideways battery change.

Feature
Battery placed on support arms.

Benefit
Gives a shorter machine and is suitable for use in applications where battery change is not needed.

Mast

The Toyota 8FBRE-S machines are available with both duplex tele anf triplex hilo mast.

Selection of lift heights

The Toyota 8FBRE-S range offer a large number of lift heights for different customer demands and this makes it possible to find an optimized solution for each individual customer. For more information regarding lift heights, se section Technical Details.

Feature
Duplex mast lift hight up 5000 mm or triplex mast lift height up to 8500 mm.

Benefit
High utilisation of storage area.

Upper mast fixation

The upper mast fixation has an eccentric locking.

Feature
Eccentric locking of mast fixation.

Benefit
Better distribution of forces from the mast leading to reduced bending of the mast.

Benefit
Good tolerances and easier adjustment for easier installation at the customer site.

Duplex tele mast - panoramic view

Feature
Chains and cylinders placed on the sides.

Benefit
Optimizes operator visibility and make fork positioning safe and easy.

Triplex hilo mast Clear view

Feature
Good overview of load and forks.

Benefit
High productivity and safety in load handling.

Feature
Standing free-lift cylinder.

Benefit
Less hoses and cables that block the view.

Support arms

Support arm width

900 mm between support arms

Dimensions	8FBRE12S-16S
Width between support arms	900
Chassis witdth	1270
Width of support arms	135

Information about residual capacities with different configurations can be found in Technical information.

Support arm wheels

Standard support arm wheel is Ø 280 mm.

The wheels are built-in and well protected to reduce damages and increase life time. It is also possible to add optional caps for support arm wheels for additional wheel protection.

An availability table is found in Technical information.

Feature
Standard wheels, Ø 280 mm.

Benefit
Best performance and durability.

Feature
Protected support arm wheels.

Benefit
Less damages – longer life time.

Feature
Wheels reachable from above.

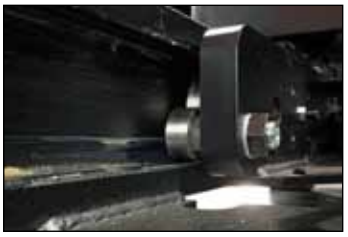
Benefit
Easy to remove picked up debris such as strings and shrink film.

Feature
Easy change of support arm wheels.

Benefit
Down time reduced to a minimum.

Reach carriage

The side plates of the reach carriage are bent for maximum strength and visibility. The reach travel is fast and yet smooth thanks to the additional roller that solely takes care of the play between the carriage and the support arms.



Forks

There are a number of different fork lengths available for the Toyota 8FBRE-S range.

Feature
Selection of fork lengths.

Benefit
Machines are easy to adapt to different application demands and to different load carriers.

The forks are according to ISO 2328 class 2A, see table in Technical information.

Availability

Model	Fork dimension	Length
8FBRE12S-16S	100x40	600-1600 mm (50 mm in step)

Fork carriage

For detailed information and measurements, please refer to Technical information.

Forks are adjustable along the fork carriage allowing following widths over forks:

		C/C distance						
		152	292	415 [1]	445 [2]	521	597	674 [3]
Model	Fork dim.	Width over forks						
8FBRE12S-16S	100x40	252	392	515	545	621	697	774

1) Only available on fork carriage with integrated sideshift

2) Not available on fork carriage with integrated sideshift

3) Outer stop screws must be removed

Short fork carriage (without sidesift, 38 mm shorter)

This fork carriage is intended for use when a short machine is needed for use in confined areas and when sideshift function is not needed.

Feature

Small dimensions on fork carriage.

Benefit

Machine has a short turning radius and requires less space to be manoeuvred.

Fork carriage with integrated sideshift

Sideshift is used to move the forks synchronized sideways with remained width over forks. Movement is +/-75 mm.

Feature

Side positioning of forks.

Benefit

Instead of repositioning the machine only the forks are moved to be in correct position to pick or deposit the load. Quick and safe operation with minimum mast sway.

Feature

Integrated unit.

Benefit

No reduction in nominal or residual capacity.

Benefit

Minimum additional length (L2).

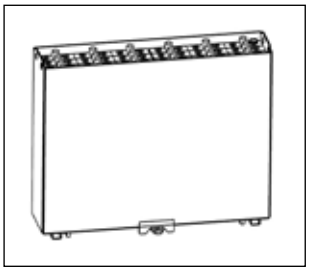
Service access

Technical information

Available battery and battery accessories for different models

Battery fitted on support arms

The battery stands on the support arms an is reached out by means of foldable keys.



Type of battery	310 Ah	465 Ah	620Ah
Battery dimensions LxHxB (mm)	1212x780x275	1212x780x275	1212x780x347
8FBRE120S	X	X	
8FBRE140S		X	X
8FBRE160S			X

Type of battery	310 Ah	465 Ah	620Ah
On support arms	X	X	X
With optional Roller bed	X	X	X
Standard lead acid	X	X	X
Central water filling (BFS)	X	X	X
Forced water filling (Aquajet)	X	X	X
Electr. Electrolyte surveillance (Agualert)	X	X	X
Acid cirkulation (Airmatic)	X	X	X
Battery weight (kg)	485-590	660-785	845-995

Capacity table

Model	8FBRE12S	8FBRE12S	8FBRE14S	8FBRE16S
Battery (Ah)	310	465	465/620	620
Depth (mm)	275	275	275/347	347
Battery weight max.	590	785	995	995
Battery weight min.	485	660	660	845
Max capacity (kg)	1200	1200	1400	1600
Lift height (mm)	6000	6500	6300	4500/5500
Lift height (mm)	**Duplex Tele mast**			
3000	1200	1200	1400	1600
3500	1200	1200	1400	1600
4000	1200	1200	1400	1600
4500	1200	1200	1400	1600
5000	1200	1200	1400	1500
Lift height (mm)	**Triplex Hilo mast**			
4400	1200	1200	1400	1600
4800	1200	1200	1400	1600
5400	1200	1200	1400	1600
5700	1200	1200	1400	1560
6300	1150	1200	1400	1450
6750	1090	1150	1330	1370
7000	1050	1100	1290	1325
7500			1210	1230
8000			1130	1140
8500			1050	1050

Floor requirements

There are no formal floor requirements for reach trucks but since this is high lifting trucks it is very important for driver safety and performance of the truck that the floor is flat and even. It is recommended to follow DIN 15 185 and TR34(UK) that is valid for narrow aisle trucks. Weight of truck and load put demands on the floor and the racking supplier give information about racking weight and floor pressure.

The table on the next page give information about axle load and static wheel pressure for the Toyota 8FBRE-S products. This information is valid for a standard specification with the given lift height and without driver. To calculate the dynamic wheel pressure at full speed the figures given in the table is multiplied with 1.4. The figures for wheel pressure are approximate and can vary with ± 10 %.

Turning radius and x-values for 8FBRE12S-16S

	Battery on support arms			
Without sideshift	**Model**	**Wa**	**Battery**	**x**
	8FBRE12S	1668	310-465	453
	8FBRE14S	1668	465	453
	8FBRE14S-16S	1668	620	381

	Battery on roller bed			
With sideshift	**Model**	**Wa**	**Battery**	**x**
	8FBRE12S	1668	310-465	415
	8FBRE14S	1668	465	415
	8FBRE14S-16S	1668	620	343

Additional dimensions

8FBRE12S-16S	**Wa**	**x**
Roller bed	1668	-9
Short fork carriage	1668	+38

Wheel pressure tables

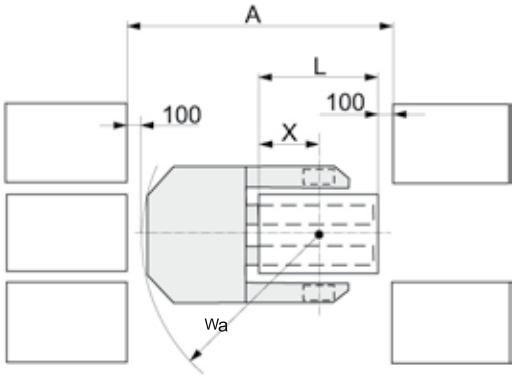
Model	**Load weight (kg)**	**Max. axle load (kg)**		**Specific wheel pressure (kp/cm²)**	
		Drive wheel	**Supp.arm wheels**	**Drive wheel**	**Supp.arm wheels**
8FBRE12S	0	1531	915		
8FBRE12S	1200	1388	3205		
8FBRE14S	0	1705	1068		
8FBRE14S	1400	1408	3696		
8FBRE16S	0	1808	1163		
8FBRE16S	1600	1451	4111		

Layout data

Calculating aisle width requirements

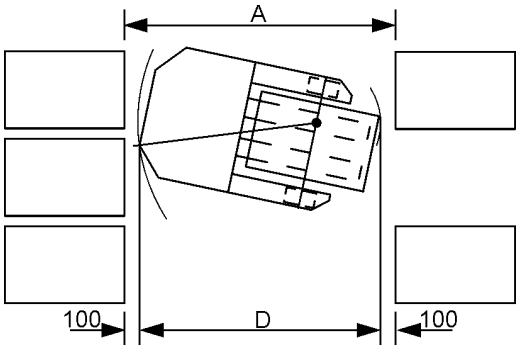
Previous standard:

A= Wa + L - X + (2x100)



BITA GN9:

A=D+ (2X100)

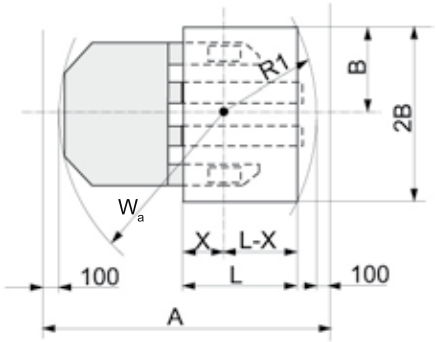


VDI 2198:

$A=W_a+R1 + (2x100)$

$R1^2=(L-X)^2+B^2$

$R1=\sqrt{(L-X)^2+B^2}$



Aisle width specifications

The table below shows the minimum widths required in truck aisles between pallets. Please note that the aisle width varies a little depending on the applied calculation method and truck specification.

Model	Battery (Ah)	EUR pallet handling	VDI 2198	
			Without sideshift	With sideshift
8FBRE12S	310/465	short side	2749	2769
		Long side	3117	3128
8FBRE14S	465	Short side	2749	2769
		Long side	3117	3128
8FBRE14S	620	Short side	2814	2836
		Long side	3139	3152
8FBRE16S	620	Short side	2814	2836
		Long side	3139	3152

Mast type and weight (kg)

Mast		Weight without fork carriage (kg)	Weight with fork carriage (kg)
Duplex	3000	361	463
Duplex	3500	398	500
Duplex	4000	434	536
Duplex	4500	471	573
Duplex	5000	508	610
Triplex 1.6 ton	4400	490	610
Triplex 1.6 ton	4800	519	639
Triplex 1.6 ton	5400	561	681
Triplex 1.6 ton	5700	583	703
Triplex 1.6 ton	6300	688	808
Triplex 1.6 ton	6750	738	858
Triplex 2.0 ton	7000	759	879
Triplex 2.0 ton	7500	991	1113
Triplex 2.0 ton	8000	1038	1160
Triplex 2.0 ton	8500	1085	1207

Instruction for programming of driver parameters

Driver parameters are programmed via the Central information display. Press the i-button and select the symbol.

Feature
Driver parameters are shown with symbols and graphics.

Benefit
Easy to see which parameter is displayed and the current setting, facilitates easy change.

Internal usage in CID:		Symbol
No	Name	
1	Steer progressive	
2	Top speed, drive wheel direction	
3	Top speed, fork direction	
4	Acceleration	
5	Auto brake	

There are also parameter settings that can be changed by a service technician:

- Hour meter
- Speed of reach carriage
- Limitation of lift height
- Oil flow and oil pressure

The first drive parameter i.e. steer progressive has possibilities to have individual setting for high and low drive speeds.

The hour meter show total usage time (not key time) that is the time the truck is active in driving or lifting/lowering. Other hour meter settings can be selected.

Reach speed is set to 100% of the max speed from the factory. Lower speed can be suitable if the truck handles instable load or if a new driver is trained.

If the truck is equipped with height indicator, limitations in the maximum lift height can be programmed.

Display of information codes

The inhibit symbol is placed in the lower left corner in the display. This table lists all available inhibit symbols in the CID and by which truck application they are used:

Internal usage in CID:		Symbol	Notes
No	Name		
1	Height limit		Lift height limit is reached. Similar symbol as “override lift height limit” button
2	Speed reduction input (Option)		Drive speed is reduced due to input, reduction set by parameter.
3	Wait On Release		A retake of active control is needed upon attemp to use truck.
4	Seat switch		Signal “seat switch” is inactive, shown upon attempt to use truck.
5	Left foot switch		Signal “left foot present” is inactive, shown upon attempt to drive.
6	Temperature		Temperature in the truck is above 85° (ACH/ACT).
7	ESO		ESO (Emergency switch off) is active.
8	Service		Time before service reaches 0 (if activated).
9	Seek reference		Reference height is not reached.

IP classes on components and units

Components	Unit	IP class
Motors	Drive motor	IP 20
	Pump motot	IP 20
	Steering servo motor	IP 54
Electronic cards	Main card unit	IP 54
	Central information display	Incl. in right hand module
	Data handling unit	IP 54
Motor controllers	8FBRE120S-160S	IP 65
Sensors	Inductive	IP 67
	Sensor bearing	IP 65
Right hand module	Single funtion control lever	IP 65
Other components	Contactor	0
	Emergency switch	IP 66
	Pedals	IP 34

Information about plastic materials

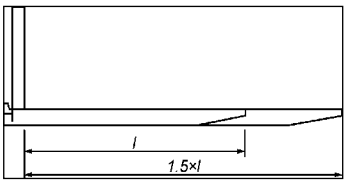
Plastic detail	Material
Injection moulded interior panels in drivers compartment	Polypropylene (PP)
Right hand module	Polycarbonate/ acrylonitrile-butadiene-styrene (PC+ABS) Urethane based thermoplastic elastomer (TPU)"
Steering module, inside	Polyamide with 30% glassfibre reinforcement (PA6-30GF)
Steering module, covers	Polycarbonate/polybutylene terephthalate (PC+PToyota) Urethane based thermoplastic elastomer (TPU)"
Elbow panel	Urethane based thermoplastic elastomer (TPU)
Finger protection	Polymethyl methacrylate (PMMA)
Floor and instep	Polypropylene (PP)
Pedals	Polycarbonate/polybutylene terephthalate with 30% glassfibre reinforcement (PC+PToyota-GF30)"
Battery plug and battery release lever	Polyamide with 30% glassfibre reinforcement (PA6-30GF)

Plastic details are marked with material information. Further information can be found in the Repair manual.

Options

Forks & fork carriage

Extension forks



For temporarily lift of loads longer than the standard forks. Max length of extension fork is 1.5 x existing fork

Model	Std fork dim.	Extension fork dimensions		
		Width	Height	Length
8FBRE12S-16S	100 x 40	140	46	1150, 1200, 1500, 1600, 1700, 1800, 2000 mm

Feature
Choice of fork lengths.

Benefit
Flexible for different loads.

Feature
Locks to the fork with a safety bolt.

Benefit
Easy to mount and dismount.

Load support

Load supports available in different heights. Not to be combined with “Protection of side shift cylinder” Available heights, from the top of the forks are: 1000 (“standard”), 1200, 1400 and 1600mm. The width is 900 mm.

Feature
Increases the height of the fork carriage back.

Benefit
Stabilizes the goods and prevents accidents and damages.

Feature
Bolted onto the fork carriage.

Benefit
Easy to retro-fit and dismount.

Cab & drivers compartment

Polycarbonate protection on overhead guard

An additional protection for small falling objects to protect the driver can be assembled on top of the overhead guard. Available both for normal size cab and cab for drive in rack.

Feature
Polycarbonate protection.

Benefit
No loss of visibility because of guard.

Benefit
Provides additional protection for the driver.

LED head lights (2 lights)

Head lights are placed on the overhead guard. The switch is placed in the right hand module. Height over overhead guard is 155 mm. Lights can be turned either in drive wheel direction or towards the mast.

Feature
Head lights.

Benefit
Provide additional light in dark areas.

Warning light on overhead guard

An orange warning light that flashes when the machine is started. Height over overhead guard is 118 mm.

Feature
Warning light.

Benefit
Alerts people around the machine that it has been activated.

Feature
Placed on the overhead guard above the overhead guard panel.

Benefit
Placement is chosen to avoid the light blinding the driver. Visible from all directions around the machine.

Height indication

Shows present lift height, measured from floor to upper side of the forks, is shown in the CID (Central Information Display).

Feature
Measurement and display of height.

Benefit
Not necessary to watch the forks all the way to the top. Reduces the strain on driver's neck, better ergonomics.

Benefit
Makes it easier to find the correct height.

Benefit
Makes it easier to avoid lifting heavy loads higher than permitted according to capacity plate.

Cushion on upright behind driver

Suitable to combine with the low or medium seat versions.

Feature
Cushion on upright behind driver.

Benefit
Provide the possibility to use the upright as a comfortable head support.

Lift height limitation with override (on main lift)

One height where the lift should be stopped can be programmed. When the height is reached the lift movement is stopped. By pushing the override button (placed in the right hand control) and lift again within 5 seconds lift can be done pass the limitation height. Limit height is set by a service parameter. The option must be combined with Height Indication.

Feature
Lift height limitation.

Benefit
Reduces the risk of lifting too high and thereby hit e.g. a low ceiling, low hanging objects, mezzanine structures, door openings etc.

Benefit
Prevents damages on goods and racking, truck and building.

Travel speed reduction over free-lift

Travel speed is automatically reduced to 3 km/h when forks are above free-lift. This option must be combined with height indication.

Feature
Travel speed reduction.

Benefit
Provide additional safety for the driver, the surroundings and the load.

Rear view mirror

A convex mirror placed on the upright. Can be adjusted in height and angle.

Feature
Convex mirror profile.

Benefit
The shape provides excellent angle of view. Makes it possible to see forks, load and rear view without bending the neck or turning the head.

Writing table A4

An A4-size (portrait) bolted writing table fitted on the E-bar. Can be moved sideways.

Feature
Writing table.

Benefit
Provides possibilities to hold picking lists, labels and other papers needed in daily work.

Feature
Transparent writing table.

Benefit

When not in use the writing table does not interfere with the all round visibility.

Note! Must be ordered with the horizontal E-bar. Not with PC/TC or keyboard holder.

Small item holder on E-bar

A small item holder for E-bar assembly is available.

Feature

Small item holder

Benefit

Small storage space for items like box cutters, marking pens etc.

Paper holder

The optional paper holder is placed behind the driver seat.

Feature

Paper holder.

Benefit

Possibility to have a larger amount of paper in a well-protected place.

Seat

Reel seat belt

The seat belt is developed specially for lift trucks. E.g. tipping accidents are relatively slow compared with car crashes why the function needs to be different. The seat belt used in Toyota 8FBRE-S works as follows; once it has been pulled out and rolled in to the tightened position it is locked. To loosen it must be fully rolled in again. Seat belt is a standard safety requirement in some countries. The seat belt is possible to retro-fit.

Feature
Seat belt.

Benefit

Provides additional safety for the driver.

Feature
Seat belt integrated in chair on the right side.

Benefit
Protected position.

Arm rest (for comfort seat)

The comfort seat can be equipped with a comfortable cushion arm rest at the left side. The angle is adjustable and tt can be folded away when entering or leaving the truck. The arm rest is possible to retro-fit.

Note! This option is not available for the basic seat.

Feature

Arm support.

Benefit
For increased comfort and reduced arm stress.

Feature
Sideway support.

Benefit
Enhanced safety and comfort.

Feature
Adjustable angle.

Benefit
Possible to vary and adaptable as desired.

Feature
Foldable.

Benefit
Easy to enter/leave the seat.

Hip guard

A fixed guard at the left side of the seat to support and protect the driver. The guard is possible to retro fit on the comfort seat.

Note! This option is not available for the basic seat.

Feature

Supports the driver.

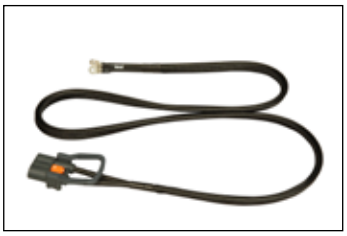
Benefit
Provides additional protection for the driver. Adds to the drivers comfort and sense of security.

Feature
Fixed low position.

Benefit
Easy to use. No obstruction when entering/leaving the truck.

Battery options

Connector with cable for charger



To be installed if using an old or locally supplied charger. Included when the charger is delivered from Mjölby together with the truck.

Feature

Connector mounted to the cable.

Benefit

High quality connection. Safe installation.

Roller bed

Toyota 8FBRE-S trucks can be equipped with roller-bed for sideway (left or right) battery change.

Feature

Battery placed on roller bed (option).

Benefit

Easy battery access for maintenance and change.

Benefit

Battery can be reached out without stepping out of the machine.

Benefit

Facilitates fast and convenient battery change.

NOTE! L2 increases with 9 mm.

Feature

Battery standing on rollers.

Benefit

Enables sideway battery change.

Benefit

Low effort needed to roll pull/push the battery.

Rollerbed is available for following variants:

Machine type	Height from floor
8FBRE12S-16S	293

PC/TC & E-bar

Horizontal E-bar

The E-bar facilitates a flexible, simple and elegant installation of accessories such as computer equipment (VMS System), keyboard, scanner, writing table etc. Robust design with double slots gives a strong fixation and freedom in placement.

Feature
E-bar.

Benefit
Accessories are easily accessible from the driver position.

Benefit
Accessories can be fixed with standard brackets.

Feature
The brackets can be used on all Toyota-trucks with E-bar.

Benefit
Easy to move equipment between the trucks.

Feature
Well proven and robust design.

Benefit
Safe fixation also for tough applications.

Keyboard mounting kit

Complete kit for fitting a keyboard to the horizontal E-bar.

Feature
Complete kit.

Benefit
Fit to purpose solution for easy installation.

Benefit
Adjustable to suit each individual drivers need.

Scanner holder

Complete kit for fitting on the E-bar.

Feature
Scanner holder

Benefit
Fit for purpose solution for applications where scanner is used.

Terminal/ PC mounting kit

Complete kit for fitting PC/TC to the horizontal E-bar.

Feature

Complete kit.

Benefit
Fit to purpose solution for easy installation.

Benefit
Adjustable to suit each individual drivers need.

Feature
Robust ball connections with a soft rubber surface.

Benefit
Reduces vibrations and protects hard disk and connections in the equipment.

Long and short connection, ball joint

Feature
Flexible and versatile.

Benefit
Fits any kind of equipment and is easy to adjust.

Feature
Robust ball connections with a soft rubber surface.

Benefit
Reduces vibrations and protects additional equipment from damages. Essential for computer hard disks.

DC/DC converter with outlet in dashboard

Power supply for equipment such as PC, scanners etc. The output power is 100W continuous.

The outlet is found next to the E-bar.

- DC/DC converter 48V/12V
- DC/DC converter 48V/24V

Feature
Power supply.

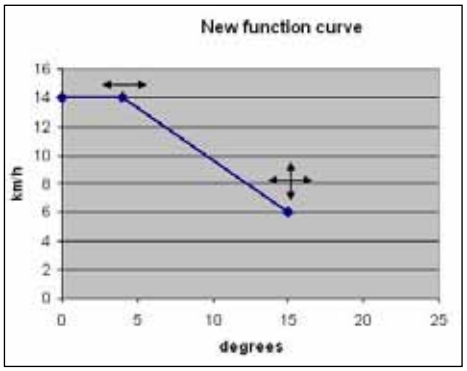
Benefit
Facilitates easy connection of electronic accessories.

Feature
Voltage stabilizer.

Benefit
Protects the equipment from voltage drops or peaks.

Miscellaneous

Speed control when cornering



The maximum speed is controlled depending on steer angle. At start up, a steer reference search ensures that the truck always starts with the drive wheel in straight position.

Feature
Reduced speed when cornering.

Benefit
Improved dynamic stability.

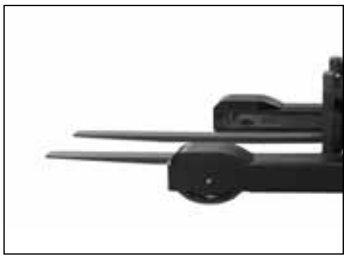
Steering angle when reduction starts and level of speed reduction can be adjusted to suit the application.

Feature
Automatic start with driving wheel position 0°.

Benefit
Avoids unexpected start direction.

Caps for support wheels

Steel caps that protect the support wheels from damages that may occur if the load is lowered down onto the wheels. Possible to retro-fit.



Feature
Protection of the wheels from above.

Benefit
Less damages on support wheels

Benefit
Possible to rest a pallet on the support arm without risk of wheel damage.

Fire extinguisher

Placed on vertical E-bar in open cab machines and on cab door on floor level when fitted in the heated cab.

Note! On drive in rack without heated cab the vertical E-bar must be ordered.

Feature
Fire extinguisher.

Benefit
Useful in areas where flammable materials are handled, always at hand in case of fire.

Two versions of fire extinguisher are available:

Type		Size	Standard	Market
Standard	ABC	2 kg	EN3	Countries following EU regulations
USA	ABC	2 kg	ANSI/UL711 & ANSI/UL299	Countries following American regulations

A = Combustible materials i.e. paper, wood, cardboard and most plastics.

B = Flammable or combustible liquids i.e. gasoline, kerosene, grease and oil.

C = Electrical equipment i.e. appliances, wiring and outlets.

Protection sideshift cylinder

A metal frame that protects the cylinder from falling load. Can not be combined with load support.

Feature

Protection for sideshift cylinder.

Benefit

Prevents risk of damages, oil leakage and loss of sideshift function.

Travel alarm

The travel alarm is set to give a signal when travelling in fork direction. It can be changed by parameter setting to e.g. tractor direction, lift/lowering or a combination.

Feature

Audible signal when driving.

Benefit

Gives a warning signal and awareness to the surroundings.

Ancillary

To facilitate battery change from the side, an externally battery table is available. The table has two roller beds; for the charged and the discharged battery.

The height from the floor to the top of the rollers are adjustable to cover the machine rollerbed height of 293 and 356 mm + 25 mm for each roller bed to compensate for worn wheels etc. See also option Roller bed above.

Battery change table is standing on legs while the trolley is equipped with wheels and a push/pull handle.

Battery change table

- Connect the Battery change cable between the battery and the truck.
- Loosen the catch on the side of the battery.
- Slide out the discharged battery.
- Move the truck.
- Remove the Battery plug slide in the new battery.

Battery change trolley

- Loosen the catch on the side of the battery.
- Slide out the discharged battery.
- Move the trolley.
- Slide in the new battery.

Feature

Battery change table/trolley with roller beds.

Benefit

Enables quick, efficient battery replacement.

Battery change cable

A battery change cable is used to connect the battery and the truck when changing batteries using Battery change table.

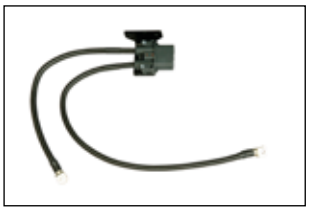
Feature

The cable is 3 m long.

Benefit

The length of the cable makes it possible to move the truck to the charged battery.

Extra battery cable



Optional battery cables can be ordered for spare batteries. Included when ordering batteries with the truck. A complete kit that includes cable, assembly bracket and plug.

Feature

Each battery can have its own cable, always fixed to the battery.

Benefit

Quick and easy connection of the battery to the truck.

Connector with cable for charger

To update chargers that have our previous connector model. Kit includes connector, cables and contacts for installation in the charger.

Appendix

Environmental work within Toyota

The Toyota trucks are produced at manufacturing sites where environmental issues are in focus. Waste management and reduction of hazardous chemicals used in production are natural parts of the everyday environmental work. We have been ISO 14001 certified since 1997, and in our continuous environmental work we put effort into reducing energy consumption on all levels, while we work with preventive actions to reduce pollution risks and risk of biological danger.

The paint systems used for Toyota trucks have been changed and there has been a dramatic reduction of solvent emissions by employing new paint-shop technology at the production sites.

Not only the production, but also the environmental impact of the trucks is focused on. The trucks contents of substances of concern to the environment are analysed. In this area we are working with environmental demands on our suppliers.

Environmental care is not only limited to reduction of pollution from factories and efficiency in use of raw materials, it also covers awareness of individual designers when they choose components, materials and take part in decisions on new production methods. Our products are developed without materials from the black list*, while the grey list materials* are reduced to a minimum and we continuously endeavour to completely eliminate them when possible.

For several trucks, environmental declarations are available. The declarations are made according to ISO 14001:2004. They provide information about the environmental impact of the trucks during manufacturing, usage and scrapping.

** The "black and grey" list was first defined by Volvo, and Toyota has adopted this definition with the approval of Volvo.*

Focus on quality within Toyota

The Toyota Way is based on the Guiding Principles at Toyota. Its five core values express the beliefs and values used in the daily work:





Challenge

To maintain a long-term vision and meet all challenges with the courage and creativity needed to realise that vision.

Kaizen

“Continuos improvement. As no process can ever be declared perfect, there is always room for improvement.”

Genchi Genbutsu

“Going to the source to find the facts to make correct decisions build consensus and achieve goals.”

Respect

Toyota respects others, makes every effort to understand others, accepts responsibility and does its best to build mutual trust.

Teamwork

Toyota stimulates personal and professional growth, shares opportunities for development and maximises individual and team performance.

Toyota production system (TPS) is a production philosophy based on the Toyota Way that provides a common base for thoughts and methods. Daily quality meetings in production are one part that leads to involvement of employees on all levels in the work with continuous improvements. This means going to the source to correct things that cause problems in order to find short-term and long-term solutions to improve the production process, methods and product quality.

Product quality is of course an essential part of having satisfied customers and the foundation to product quality is laid already in the development phase. At Toyota we follow the process in each development project to find and take actions on possible risks; both on product and project level.

Products and components are tested and evaluated throughout the development process both in lab environments and field tests. As a complement to calculations structural tests as well as life time tests are performed.

Apart from the functional testing and control made on all products before delivery, product quality is continuously monitored during manufacturing through welding audits on components and product audits on completed trucks.

We have had an ISO 9000 certification since 1994.