

NICHYU



Good Design Award

## **NICHIYU ELECTRIC FORKLIFTS**

Counter Balanced truck Models : **FB-DC70 Series**



formerly **NYK**



**This is  
the forklift model  
you've been  
waiting for!**

**Can be used in the rain**

**Powerful and dependable**

**Comfortable to operate**

**Economical and  
environmentally friendly**

# We developed this model with a focus on **Practicality.**

You know battery-powered forklifts are environmentally sound, but their inability to function in the rain and reputation for being less robust than fuel-powered forklifts may have left you uncommitted. Now, Nichiyu introduces the FB-DC70 Series, a new forklift that is capable of functioning at both indoor and outdoor loading and unloading sites. Not only does this battery forklift demonstrate exceptional operability, comfort and safety, it is also dependable and water-resistant. What's more, it is clearly more comfortable and more versatile. At Nichiyu, we've placed a special focus on practicality. This is the forklift model you've been waiting for.

## Recipient of the Good Design Award

*The Nichiyu FB Series was awarded the Good Design Award (G-Mark) at the selection process for the 2001 Good Design Award sponsored by the Japan Industrial Design Promotion Organization. Our design was recognized for remaining faithful to basic objectives, and our approach of developing products that everyone can use safely and comfortably was evaluated highly. The Good Design Award is a distinguished award presented for products that are identified as having original and excellent design and contributing to an improved way of life. Receiving this award signifies that the FB Series has been recognized as a high-quality product.*



**Good Design Award**





## **Designed to function in the rain**

**Have you always believed that a fuel-powered forklift is  
the only type that can be used outdoors?**

**The Model FB-DC70 has overturned the conventional belief that  
battery forklifts cannot be used in wet weather.**

**Now, we have entered the era of the battery forklift that  
can be used either indoors or out, in many kinds of wet weather and dry,  
as long as the operator is willing to do so.**

## IPX3\* Rating

Rated as “waterproof type IPX3\*,” this model can readily operate in the rain falling vertically or at angles up to 60° with no harmful effects. Nichiyu, the pioneer in battery forklifts, has unquestionably solved this clear disadvantage to the conventional battery forklift, taking the evolution one step further.



## \*IPX3

Grade 3 of the “electromechanical device grade test for waterproofing and resistance to penetration by solid objects” as prescribed by the Japanese Industrial Standard.

## Electrical components are stored within the side frame

The charging transformer is located inside the frame on the left-hand side of the vehicle, while the cargo handling motor is located inside the frame on the right-hand side. This configuration utilizes a structure that effectively prevents water ingress.

## Numerous additional innovations prevent water penetration



This vehicle is equipped with drip-proof floor mats and lever boots as standard.



These innovations prevent water penetration through gaps, ensuring that electrical devices under the floor are protected from exposure to water. The enhanced effectiveness of the waterproofing design provides for greater peace of mind.

## Control equipment is stored inside the weight

All control equipment in this vehicle is safely located inside the counterweight at the very rear of the vehicle. Considering possible areas of water flow, we have used rubber weatherstripping to ensure that air and water cannot penetrate the vehicle.



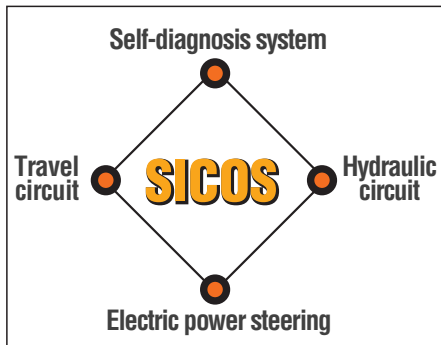


# **Powerful and highly dependable**

**In addition to incorporating a DC-operated hydraulic motor whose dependability has been proven during many years in the field, the Model FB-DC70 is equipped with many features not found in conventional vehicles, including a multifunctional centralized control system, for remarkably improved reliability.**

**Moreover, this battery-powered vehicle offers superior-level power.**

**The optimal loading and unloading work can always be performed free from stresses and according to need.**

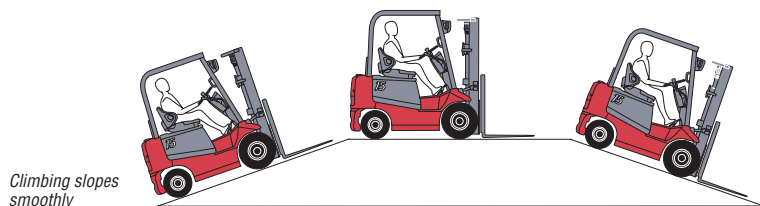


### Advanced SICOS-60 Control System

An integrated 8-bit CPU controls the traveling, loading/unloading and EPS. In addition to offering improved traveling performance such as acceleration, inching and regenerative efficiency, this multifunctional centralized control system achieves superfine control, including consistent lift speed and regulated electrical current.

### Hill-climbing performance

With its powerful motor, unique control system and control optimization, this forklift climbs slopes smoothly. Specs alone don't tell the whole story - you'll have to try it to see how smoothly it handles grades.



### Lifting performance

With its high-output motor, the FB-DC70 provides powerful lifting performance. We placed special emphasis on the quality of lift operations, such as easing the impact and reducing the sound generated at the mast joint during lifting operations. In addition, we softened the impact and sound generated when forks are lowered to the ground.

### Option High-capacity battery

This model can be equipped as an option with high-capacity battery capable of handling long periods of loading and unloading operations. Efficiency of loading and unloading work is further increased thanks to the reduced number of recharges required. Moreover, operation time per charge has been increased dramatically.



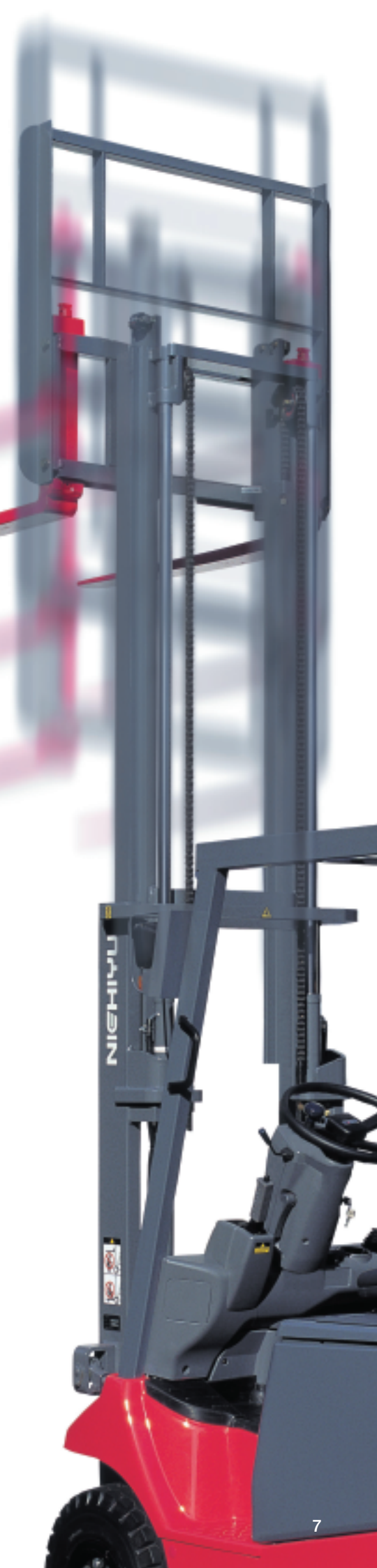
### Highly dependable DC-operated travel and hydraulic motor

Nichiyu takes great pride in its large DC motors, the result of a 60-year history of improvements and progress. Thanks to its outstanding stability, this motor is recognized as being highly failure-resistant. It therefore provides great peace of mind when used for operations in huge warehouses, even locations where stacking of pallets and loading and unloading operations are performed frequently.



### Performance on grade

This model exhibits excellent performance on grades by incorporating a regenerative function as standard equipment. When the vehicle accelerator is off, the regenerative braking mechanism quickly takes effect, ensuring safe downhill coasting.





# Safe and Comfortable Operation

**Improved ease-of-use and increased comfort lead to enhanced safety.**

**Nichiyu has sought to develop a forklift that everyone – from novice to expert – can operate in comfort and with ease.**

**The people-friendly equipment and design of this forklift have been**

**developed with a focus on the operator's position and comfortable operation.**

**The more you use this forklift, the more you'll appreciate its advantages.**



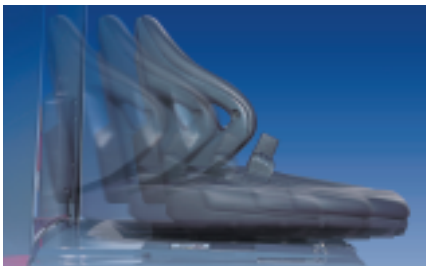


### Dismounting pad included

The forklift features an armrest located on the battery cover. Its non-slip surface contributes to safety when the operator is getting on or off the vehicle, even when gloves are being worn. In addition, this prevents the surface from becoming too cold or hot during weather extremes.

### “ORS Type Seat” eliminates operator fatigue

Designed according to ergonomic principles, the operator’s seat firmly envelops the operator and maintains the optimal driving position. The excellent feeling of stability offered by this seat eliminates operator fatigue from long periods of operation. What’s more, the seat is water-resistant and highly durable.



The seat shown in the photo is option.

### Handles tight turns

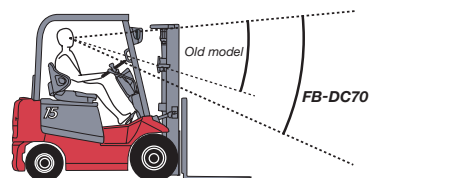
One of the features of the FB-DC70 is its ability to handle small-radius turns. Even in confined locations and on narrow aisles with right-angle turns, this forklift can be maneuvered with ease. Moreover, it features EPS (electronic power steering) as standard equipment. As well, steering is easy even when the forklift is running at low speed.

### Rear combination lamp

The forklift is equipped with a rear combination light, positioned at the rear, that functions in combination as a tail-light, brake light, back-up light and blinker. This greatly improves visibility of the rear of the forklift.

### Comfortable cockpit with wide field of vision

The operator’s seat of the Model FB-DC70 has been designed 45 mm lower than a conventional seat, while the front hood is also lower. What’s more, the structure of the mast and headguard has undergone a redesign. As a result, the field of vision has been expanded, offering an excellent view from the leading edge of the forks upward. What’s more, the floor is 15 mm wider, providing the operator with more space and comfort.



A very wide visibility increases an efficiency of material handling.

### Walk-through floor for easy entrance and exit

The open steps are lower and wider and positioned on both sides to allow for easier entrance and exit. This makes it easier for women and people of smaller stature to get on and off the forklift. Moreover, the wider floor area contributes to greater operator ease and comfort when getting on and off either side of the forklift.



### Incorporates shock absorbers and soft-landing cylinders

The forklift features a “soft-landing mechanism” that reduces the loud impact that results when the forks are lowered and strike the ground. What’s more, the shock produced by the mast joint when the forks are raised has been mitigated, reducing the mental strain on the operator from the possibility of a collapsing load, shock or damage.



### Neutral safety function

If the key is switched on while the accelerator pedal is stepped on or the hydraulic lever is operated, the vehicle will not start. This feature prevents accidents by limiting unintended operation.

### Large, easy-to-read color LCD

A color LCD is located at the center in front of the driver’s seat. Its digital system is capable of displaying the driving speed, battery charge, hour meter and other information in real time. This system rapidly reveals everything from operation status to machine condition and enables the operator to grasp all-important information at a glance. And should a problem occur, the included self-diagnostic function can help to reveal the cause.





# **Economical and environmentally sound**

**Because this is a battery-powered vehicle, it generates no exhaust fumes and is considered very environmentally sound.**

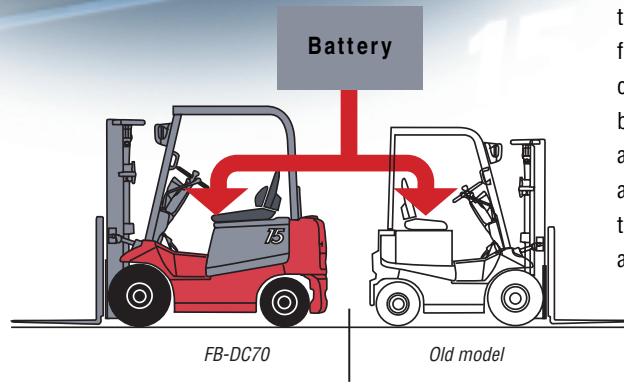
**It produces no carbon monoxide, carbon dioxide, nitrogen oxides or other harmful gases that contribute to global warming and air pollution—substances that have recently become the targets of a global effort to reduce air pollution.**

**Therefore, Nichiyu is pursuing the goal of economy and the benefit of energy efficiency, as well as the advantage of a battery-powered vehicle that itself imparts no environmental load.**



## Compatible with conventional battery models

This model is compatible with the batteries used in conventional forklift models. As a result, you can continue to use your conventional battery, as there is no need to make an additional investment and buy a replacement. At Nichiyu, we believe that every component should have a long service life.



## Gentle to people and goods

Fueled vehicles generate exhaust fumes as they run. This not only results in damage to merchandise as a result of the odors and soot generated, but also risks the health of the operator and others who work nearby due to the generation and circulation of toxic exhaust fumes and dust. Battery-powered vehicles, on the other hand, not only generate no exhaust fumes, but they also run more smoothly. Moreover, compared to a fuel-powered vehicle or conventional battery-powered vehicle, the Model FB-DC70 displays an absolute minimum of noise or vibration.

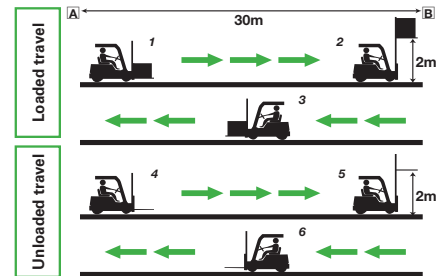
## Emissions of exhaust gas and carbon dioxide (per hour)

This graph displays in illustrated form the carbon dioxide and toxic gases output by a 1.5 metric ton gasoline vehicle, 2 metric ton diesel vehicle, and battery-powered vehicle per hour when a 30-meter work cycle is performed.

Carbon monoxide emissions (per hour, in grams)		
Gasoline vehicle	Diesel vehicle	Battery-powered vehicle
13.24	0.23	0.00

Nitrogen oxide emissions (per hour, in grams)		
Gasoline vehicle	Diesel vehicle	Battery-powered vehicle
1.76	1.22	0.00

Carbon dioxide emissions (per hour, in grams)		
Gasoline vehicle	Diesel vehicle	Battery-powered vehicle
146.37	205.39	0.00



**30m work cycle** (30m between A-B)

1. Loaded travel from point A to point B
2. Tilt/lift up/lift down at point B (loaded)
3. Same task as 2. after loaded travel from point B to point A
4. Unloaded travel from point A to point B
5. Tilt/lift up/lift down at point B (unloaded)
6. Same task as 5. after unloaded travel from point B to point A

## Low operation costs

Compared to fuel-powered vehicles, battery-powered vehicles offer lower operating costs. Moreover, because battery-powered vehicles have a long life expectancy, their total costs are the same or less than those of comparable fuel-powered vehicles. What's more, the Model FB-DC70 can be operated in the rain and is clean to run. The more you use this forklift, the more you'll appreciate its advantages.

## Energy-saving design

Efficient design of all devices intended to control battery energy consumption combined with a variety of electric power regeneration functions contribute to improved productivity.

## Auto power-off function

The model FB-DC70 is equipped with an auto power-off function that automatically switches off the power source when the forklift has not been used for more than 10 minutes, even when key switch is turned on. This prevents unnecessary electric power consumption should the operator neglect to switch off the vehicle when it is not in use.

## Plugging regeneration

The electric energy generated during plugging operation (switching between forward and reverse while driving) is effectively recovered.

## Braking regeneration

This feature takes effect during regular braking. It helps to recover energy, prolongs brake life by limiting wear of the brake linings, and reduces the effort required to activate the brake.

## Speed control and power regeneration on grades

When the forklift is coasting down a slope and the accelerator is not being applied, this feature takes effect to decelerate the vehicle, acting as a so-called engine brake and recovering energy.



## Variations

A variety of types are available according to your work environment.

### Cold storage type (CS)

We offer a truck model that approaches refrigeration specifications, accommodating temperatures as low as -35°C. This model is resistant to low temperatures, moisture and rust, ensuring reduced labor during low temperature distribution tasks.

### Dust resistant type (CD)

This truck is recommended for customers who handle powder products or work in very dusty locations.

## About US

Nichiyu is the pioneer in battery forklifts. Since developing the first battery forklift in Japan in 1937, we have spent more than 60 years refining and marketing a succession of outstanding models, each of which is capable of solving a particular loading or unloading issue.

As a manufacturer specializing in battery forklifts, we take pride in offering user-oriented products that ensure unmatched customer satisfaction. Today, Nichiyu is proud of having garnered a leading share of the markets in Japan, China and Southeast Asia. Demand for battery forklifts is increasing worldwide in light of the growing interest in environmental issues. In the future, we will remain committed to developing products designed with the customer in mind while responding to the needs of the environment. Through this approach, we will contribute greatly to the efficiency of our customers' businesses and contribute to the needs of environmental preservation around the world.

# NICHIYU

All specifications are confirmed based on manufacturer's terms and conditions.

All specifications are subject to change without notice due to further improvement or modifications.

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