SUEC (Stand Up End Controller) FBC15-20NS for North American Market (Electric Counterbalanced Type Three-Wheel Forklift Truck)

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS
MATERIAL HANDLING EQUIPMENT BUSINESS DEPARTMENT

This model is the first warehouse truck developed by Mitsubishi Heavy Industries, Ltd. (MHI) and is unique to the North American market. This truck has high traction performance of electric counterbalanced three-wheel forklift truck and easy on/off access of stand up rider truck such as reach forklift truck. It meets customers' expectation by providing precise control which has been realized by the industry's first AC system[1] and an electric steering system. This AC system utilizes MHI's AC controller which has been successfully adopted for other electric forklift trucks manufactured for overseas markets. To improve product quality, market surveillance was conducted in advance and field applications understood. This process was to assure high quality. In February 2007, we started production of our new model developed in-house, whose performance and operation are dramatically superior to current OEM vehicles, and started shipping them to the North American market.

Note 1: AC motor system. Unlike current DC motors which have brushes, AC motors have no brushes, thus easing maintenance.

1. Product Specifications

Table 1 shows the wide product lineup of the SUEC (capacity range 1,360-1,810 kgf).

2. Characteristics

For the first time in the industry of this type of truck, an AC system has been adopted for both traction and lift systems to improve maneuverability and maintenance.

(1) Maneuverability

- Improved maneuverability by additional traction control on ramps and an anti-skid function.
- Achieved good responsible operation of traction and up to 4 way hydraulics using joystick alone.
- Usage of EPS[2] in the steering system improved operational feeling.

Note 2: Electric power steering system. This ensures a quieter and more efficient steering system than hydraulic power.

(2) Reliability

- Improved reliability and serviceability by adoption of MHI's AC controller which is used in our electric forklift trucks for overseas markets.
- The new mast for the 1t class truck was designed based on our current forklift mast. This assured reliability and also reduced costs by using parts in common.

(3) Serviceability

- New LCD (liquid crystal display) panel displays truck status messages and enables the operator to customize truck settings and self-diagnose the truck condition. These new features improved the man-machine interface.
- Adoption of dual-pedal system, when operating with joystick only the hydraulic system is activated and traction stay stop, improved maneuverability.

Table 1 Major models and specifications

Item			Standard		
			FBC15NS	FBC18NS	FBC20NS
Capacity (kgf)			1360	1588	1810
Max. lifting height (mm)			3700	3700	3700
Overall length (mm)			1713	1713	1854
Overall width (mm)			1040	1040	1040
Wheel base (mm)			1167	1167	1295
Overhead guard height (mm)			2240	2240	2240
Min. turning radius (mm)			1410	1410	1535
Lifting speed (empty) (mm/s)			550	550	550
Travel speed (empty) (km/h)			12.4	12.4	12.4
Service weight (kg)			3500	3800	4200
Battery	Voltage (V)		36	36	36
	Capacity/ 6 hr. discharge rate (A•h/6h)		1240	1240	1240
Electric motor	Traction	Type	AC induction	AC induction	AC induction
		Output (kW)	4.4	4.4	4.4
	Lift	Type	AC induction	AC induction	AC induction
		Output (kW)	11.0	11.0	11.0
	Power steering	Type	AC induction	AC induction	AC induction
		Output (kW)	0.4	0.4	0.4