



Mitsubishi's New 8-16 t Forklift Trucks Realize World-Class Environmental Efficiency and Operator Comfort

GENERAL MACHINERY & SPECIAL VEHICLE HEADQUARTERS
MATERIAL HANDLING EQUIPMENT BUSINESS DEPARTMENT

Forklift truck industries nowadays have heightened requirements for easy operation, comfort, and convenience, even for their larger-class vehicles. Mitsubishi Heavy Industries, Ltd. (MHI) has responded by developing a large-class forklift truck (load capacity of 8 to 16 tons) with drastically improved features to meet these requirements. The new vehicle has been on sale since February 2007.

1. Specifications

Table 1 shows the specifications of the new forklift truck. **Fig. 1** shows the external appearance.

2. Characteristics

- (1) One of the first forklift trucks to meet the new domestic regulations on exhaust emissions

The PM (black smoke) and NOx (nitrogen oxide) contained in the exhaust gas are reduced by 40 to 50%



Fig. 1 External appearance of the FD135N

Table 1 Major specifications

	Model	FD80N	FD90N	FD100N	FD120N	FD135N	FD150AN	FD160AN
Performance	Rated load (kgf)	8 000	9 000	10 000	12 000	13 500	15 000	16 000
	Lift speed, laden (mm/s)	550	440	460	460	380	380	350
	Lowering speed, laden (mm/s)	500	400	460	460	480	480	440
	Travel speed, laden/unladen (km/h)	27/31	26/30	24/29	23/29	23/30	22/30	22/30
	Drawbar pull, laden/unladen (N)	85 600/40 700	84 800/46 200	86 500/50 200	85 700/49 700	78 800/51 800	78 400/55 200	77 900/60 300
	Gradeability, laden/unladen (%)	49/31	39/28	38/30	33/27	27/26	25/27	23/29
	Turning radius (mm)	3 830	3 930	3 990	4 055	4 150	4 550	4 805
Major dimensions and weight	Overall length (mm)	5 285	5 460	5 485	5 565	5 740	6 050	6 260
	Overall width (mm)	2 390	2 390	2 370	2 375	2 455	2 455	2 635
	Height of overhead guard (mm)	2 845	2 845	2 915	2 915	2 960	2 960	2 960
	Wheelbase (mm)	2 650	2 650	2 800	2 800	2 800	3 100	3 300
	Tire size (Front)	9.00-20-12PR	9.00-20-14PR	10.00-20-14PR	10.00-20-16PR	12.00-20-18PR	12.00-20-18PR	12.00-20-20PR
	Tire size (Rear)	9.00-20-12PR	9.00-20-14PR	10.00-20-14PR	10.00-20-16PR	12.00-20-18PR	12.00-20-18PR	12.00-20-20PR
	Service weight (kgf)	12 040	13 720	14 830	16 090	17 600	17 970	19 140
Engine	Model name	MITSUBISHI 6M60-TL						
	Rated output (kW/rpm)	110/2 100						
	Maximum torque (Nm/rpm)	610/1 600						
	Number of cylinders / displacement (cc)	6/7 545						

compared with our conventional models. The reduction is accomplished by two mechanisms: a common-rail-type fuel injection system to inject high-pressure fuel for increased combustion efficiency and accurate control by computer. The vehicle is driven by a diesel engine that meets what have been described as the world's toughest regulations on specific vehicle exhaust emissions (Japan's Ministry of the Environment, Ministry of Economy, Trade and Industry, and Ministry of Land, Infrastructure and Transport).

(2) Low vibration and low noise

Low vibration and low noise are realized by adopting a full-floating cabin completely independent of the engine room, in addition to the conventional power line full-floating technology.

(3) Operation as easy as driving a passenger car

Fatigue is reduced by a steering wheel, levers, and pedals as light as those of small trucks. The hydraulic system includes a proportional directional valve as standard equipment, allowing the operator to select between two types of control, lever control and

finger control (option).

(4) Safety in traveling and cargo handling

The vehicle is equipped with Mitsubishi's interlock system, a mechanism to lock the mast control and vehicle movement when the operator leaves his or her seat.

(5) Easy maintenance

Daily checks can be performed by opening the covers with one-touch operation. A simple tilt of the cabin gives engineers full access to the engine, transmission, and hydraulic system for heavy maintenance. The engine oil lubrication interval is extended to 500 hours, as in the new small series.

(6) High reliability and durability

A high-rigidity frame with firm connection between the side frames (tank portion) and integrated center frame ensures excellent durability and reliability. In addition, a wet disk brake is available as an option for the 8- to 15-ton models (standard equipment for the 16-ton model), making it easier to carry out long-hour work operations.