

**FD80N
FD90N
FD100N
FD120N
FD135N
FD150N
FD160N**

FD80-160N Series

Diesel Counterbalance • 6 Wheel Pneumatic Tyres
8.0 – 16.0 tonnes

A tough truck... with a gentle touch

These heavyweight trucks deliver all the productivity and reliability you would expect from a Mitsubishi product – in a rugged, extremely powerful package. And although they are tough in action, they are gentle on the driver and the environment. Low noise, effortless hydraulic control and refined ergonomics make driving a pleasure, while emissions have been minimised to meet the strict European exhaust emissions regulations.

Styling is modern and attractive, and a choice of seven capacities is offered to meet every need. Lift speed and gradient performance are exceptional, thanks to the high-powered engine and efficient transmission.

High-quality components, protective features and easy service access maximise uptime, while great all-round visibility, a secure operator compartment and the Integrated Presence System (IPS) give peace of mind.

Frame and body

- **Box-shaped structure** with integrated fuel and hydraulic tanks gives the chassis excellent rigidity.
- **Fenders and steps** are bolted to the chassis for easy servicing.

Mast and fork assembly

- **Separately constructed mast channels** add extra strength, while straight-positioned roller bearings and adjustable side rollers ensure total reliability.
- **Standard shaft-type carriage** with low shaft height optimises visibility.
- **Carriage design** includes single centre bar with consequently large fork adjustment range for great functionality.
- **Simultaneous and independent fork control** options can be chosen by the driver according to preference.



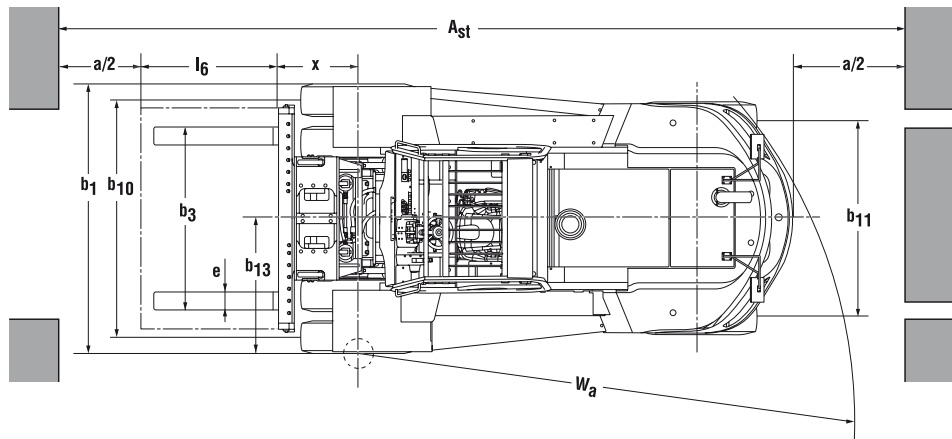
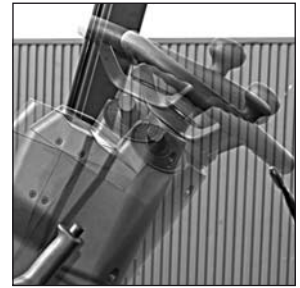
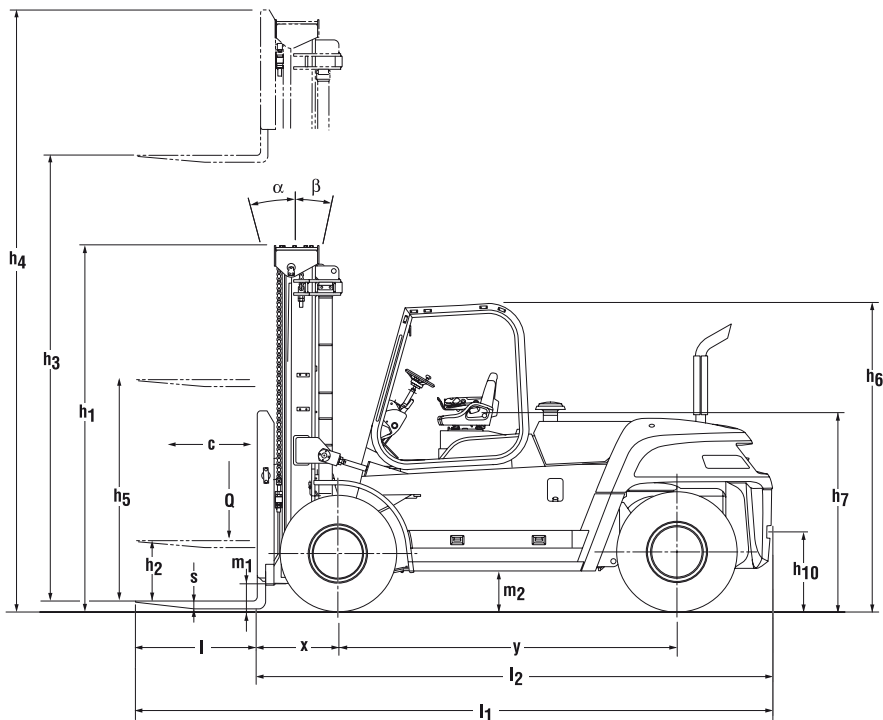
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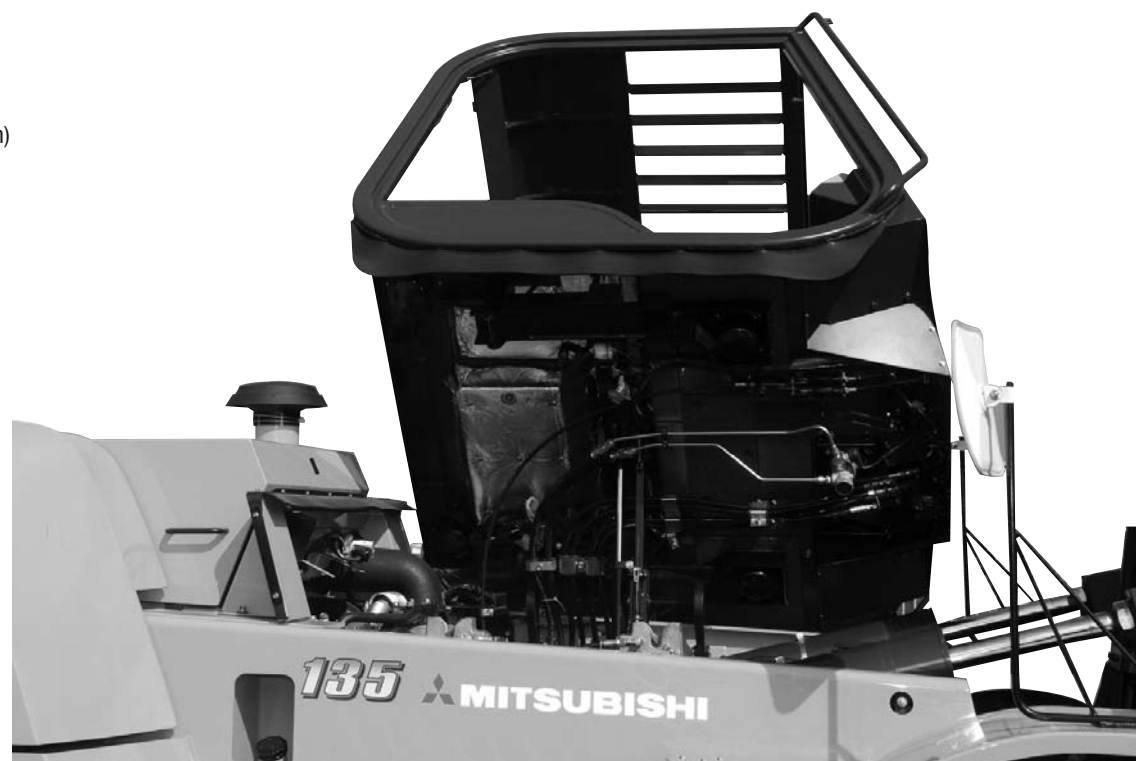
8.0 - 16.0 tonnes

Characteristics				Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi
1.1	Manufacturer (abbreviation)			Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi	Mitsubishi
1.2	Manufacturer's model designation			FD80N	FD90N	FD100N	FD120N	FD135N	FD150N	FD160N
1.3	Power source: (battery, diesel, LP gas, petrol)			Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
1.4	Operator type: pedestrian, (operator)-standing, -seated			Seated	Seated	Seated	Seated	Seated	Seated	Seated
1.5	Load capacity	Q	(kg)	8000	9000	10000	12000	13500	15000	16000
1.6	Load centre distance	c	(mm)	600	600	600	600	600	600	600
1.8	Load distance, axle to fork face	x	(mm)	675	755	755	765	795	795	805
1.9	Wheelbase	y	(mm)	2650	2650	2800	2800	2800	3100	3300
Weight										
2.1	Truck weight, without load / including battery (simplex mast, lowest lift height)		kg	11740	13510	14800	16060	17700	18050	18950
2.2	Axle loading with maximum load, front/rear (simplex mast, lowest lift height)		kg	17740 / 2000	20290 / 2220	22290 / 2510	25190 / 2870	28060 / 3140	29930 / 3120	31720 / 3230
2.3	Axle loading without load, front/rear (simplex mast, lowest lift height)		kg	5890 / 5850	6685 / 6825	7450 / 7350	7340 / 8720	7850 / 9850	8190 / 9860	8910 / 10040
Wheels, Drive Train										
3.1	Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front/rear			L	L	L	L	L	L	L
3.2	Tyre dimensions, 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
3.3	Tyre dimensions, 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
3.5	Number of wheels, front/rear (x=driven)			4X / 2	4X / 2	4X / 2	4X / 2	4X / 2	4X / 2	4X / 2
3.6	Track width (centre of tyres), front	b10	(mm)	1820	1820	1900	1900	1905	1905	1905
3.7	Track width (centre of tyres), rear	b11	(mm)	1755	1755	1965	1965	1925	1925	1890
Dimensions										
4.1	Mast tilt, forwards/backwards	α/β	°	15 / 12	15 / 12	15 / 12	15 / 12	15 / 12	15 / 12	15 / 12
4.2	Height with mast lowered (see tables)	h1	(mm)	3275	3520	3590	3590	3885	3885	4035
4.3	Free lift (see tables)	h2	(mm)	160	0	0	0	0	0	0
4.4	Lift height (see tables)	h3	(mm)	4000	4000	4000	4000	4000	4000	4000
4.5	Overall height with mast raised	h4	(mm)	5325	5490	5590	5590	5930	5930	6035
4.7	Height to top of overhead guard	h6	(mm)	2845	2845	2915	2915	2960	2960	2960
4.8	Seat height	h7	(mm)	1800	1800	1875	1875	1915	1915	1915
4.12	Tow coupling height	h10	(mm)	565	565	695	695	735	735	735
4.19	Overall length	l1	(mm)	5285	5460	5510	5595	5750	6050	6260
4.20	Length to fork face (includes fork thickness)	l2	(mm)	4065	4240	4295	4375	4530	4830	5040
4.21	Overall width	b1/b2	(mm)	2390	2390	2515	2515	2600	2600	2635
4.22	Fork dimensions (thickness, width, length)	s / e / l	(mm)	64 / 180 / 1220	72 / 180 / 1220	72 / 180 / 1220	79 / 180 / 1220	88 / 180 / 1220	88 / 180 / 1220	92 / 180 / 1220
4.23	Fork carriage to DIN 15 173 A/B/no			no	no	no	no	no	no	no
4.24	Fork carriage width	b3	(mm)	1825	2210	2210	2210	2220	2220	2220
4.31	Ground clearance under mast, with load	m1	(mm)	215	205	220	220	260	260	260
4.32	Ground clearance at centre of wheelbase, with load (forks lowered)	m2	(mm)	230	230	275	275	320	320	320
4.33	Working aisle width with 1000 x1200 mm pallets, crosswise	Ast	(mm)	5925	6105	6165	6235	6365	6755	7030
4.34	Working aisle width with 800 x1200 mm pallets, crosswise	Ast	(mm)	-	-	-	-	-	-	-
4.35	Turning circle radius	Wa	(mm)	3830	3930	3990	4050	4150	4545	4805
4.36	Minimum distance between centres of rotation	b13	(mm)	1535	1535	1550	1550	1550	1805	1975
Performance										
5.1	Travel speed, with/without load		km/h	27 / 31	26 / 30	24 / 29	23 / 29	23 / 30	23 / 30	22 / 30
5.2	Lifting speed, with/without load		m/s	0.550 / 0.570	0.440 / 0.460	0.460 / 0.480	0.460 / 0.480	0.380 / 0.400	0.380 / 0.400	0.350 / 0.370
5.3	Lowering speed, with/without load		m/s	0.550 / 0.500	0.440 / 0.400	0.460/0.500	0.460 / 0.500	0.480 / 0.510	0.480 / 0.510	0.440 / 0.470
5.5	Rated drawbar pull, with/without load		N	85600 / 40700	84800 / 46200	86500 / 50200	85700 / 49700	78800 / 51800	78400 / 55200	77900 / 60300
5.7	Gradeability, with/without load		%	49 / 31	39 / 28	38 / 30	33 / 27	27 / 26	25 / 27	23 / 29
5.9	Acceleration time (10 metres) with/without load		s	-	-	-	-	-	-	-
5.10	Service brakes (mechanical/hydraulic/electric/pneumatic)			drum / pneum - hydr	drum / pneum - hydr	drum / pneum - hydr	drum / pneum - hydr	drum / pneum - hydr	drum / pneum - hydr	WDB / pneum - hydr
IC Engine										
7.1	Manufacturer / Type			MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL	MITSUBISHI 6M60-TL
7.2	Rated output to ISO 1585		kW	110	110	110	110	110	110	110
7.3	Rated speed to DIN 70 020		rpm	2100	2100	2100	2100	2100	2100	2100
7.4	7.Number of cylinders / cubic capacity		cm ³	6 / 7545	6 / 7545	6 / 7545	6 / 7545	6 / 7545	6 / 7545	6 / 7545
7.5	Fuel consumption according to VDI 60 cycle		l/h / kg/h	-	-	-	-	-	-	-
8.1	Type of drive control			Torque converter	Torque converter	Torque converter	Torque converter	Torque converter	Torque converter	Torque converter
8.2	Maximum operating pressure for attachments		bar	181	181	206	206	206	206	206
8.3	Oil flow for attachments		l/min	-	-	-	-	-	-	-
8.4	Noise level, value at operator's ear (EN 12053)		dB(A)	-	-	-	-	-	-	-
8.5	Towing coupling design / DIN type, ref.			-	-	-	-	-	-	-





$A_{st} = W_a + x + l_6 + a$
 A_{st} = Working aisle width with load
 a = Safety clearance (200 mm)
 l_6 = Pallet length (800 or 1000 mm)
 b_{12} = Pallet width (1200 mm)



Mast Performance and Capacity

FD80N						
Mast Type	h3	h1	h4	tilt angle	h2 / h5 mm	Q @ c=600 mm kg
	mm	mm	mm			
Simplex	3000	2775	4325	15-12	160	8000
	3300	2925	4625	15-12	160	8000
	3500	3025	4825	15-12	160	8000
	3700	3125	5025	15-12	160	8000
	4000	3275	5325	15-12	160	8000
	4500	3525	5825	15-12	160	8000
	5000	3875	6325	15-12	160	8000
	5500	4125	6825	6-6	160	7800
	6000	4375	7325	6-6	160	7600
	6500	4625	7825	6-6	160	7400
	7000	4875	8325	6-6	160	5800
Triplex	3700	2575	5025	6-6	1255	7500
	4000	2675	5325	6-6	1355	7500
	4300	2775	5625	6-6	1455	7500
	4500	2850	5835	6-6	1525	7500
	4700	2925	6025	6-6	1625	7500
	5000	3025	6325	6-6	1705	7500
	5500	3275	6825	6-6	1955	7200
	6000	3445	7335	6-6	2125	6800
	6500	3625	7825	6-6	2305	6500
	7000	3775	8325	6-6	2455	5800
	7500	3945	8835	6-6	2625	5100
8000	4125	9325	6-6	2805	4500	

FD90N						
Mast Type	h3	h1	h4	tilt angle	h2 / h5 mm	Q @ c=600 mm kg
	mm	mm	mm			
Simplex	3000	2970	4490	15-12	-	9000
	3300	3120	4790	15-12	-	9000
	3500	3270	4990	15-12	-	9000
	3700	3370	5190	15-12	-	9000
	4000	3520	5490	15-12	-	9000
	4500	3820	5990	15-12	-	9000
	5000	4070	6490	15-12	-	9000
	5500	4320	6990	6-6	-	8700
	6000	4620	7490	6-6	-	8400
	6500	4870	7990	6-6	-	8000
	7000	5170	8490	6-6	-	6600

- h1 Height with mast lowered
- h2 Standard free lift
- h3 Lift height
- h4 Height with mast raised
- h5 Full free lift
- Q Lifting capacity, rated load
- c Load centre (distance)

Mast Type	FD100N-FD120N				FD100 N		FD120N	
	h3 mm	h1 mm	h4 mm	tilt angle	h2 / h5 mm	Q @ c=600 mm kg	h2 / h5 mm	Q @ c=600 mm kg
Simplex	3000	3090	4590	15-12	-	10000	-	12000
	3300	3240	4890	15-12	-	10000	-	12000
	3500	3340	5090	15-12	-	10000	-	12000
	3700	3440	5290	15-12	-	10000	-	12000
	4000	3590	5590	15-12	-	10000	-	12000
	4500	3840	6090	15-12	-	10000	-	12000
	5000	4090	6590	15-12	-	10000	-	12000
	5500	4340	7090	15-12	-	10000	-	12000
	6000	4640	7640	6-6	-	9800	-	11800
	6500	4890	8140	6-6	-	9600	-	11400
7000	5190	8690	6-6	-	9200	-	11100	

FD135N						
Mast Type	h3	h1	h4	tilt angle	h2 / h5 mm	Q @ c=600 mm kg
	mm	mm	mm			
Simplex	3000	3335	4930	15-12	-	13500
	3300	3485	5230	15-12	-	13500
	3500	3635	5430	15-12	-	13500
	3700	3735	5630	15-12	-	13500
	4000	3885	5930	15-12	-	13500
	4500	4135	6430	15-12	-	13500
	5000	4385	6930	15-12	-	13500
	5500	4685	7435	15-12	-	13500
	6000	4935	7935	6-6	-	13300
	6500	5235	8485	6-6	-	12900
7000	5485	8985	6-6	-	12600	

FD150N						
Mast Type	h3	h1	h4	tilt angle	h2 / h5 mm	Q @ c=600 mm kg
	mm	mm	mm			
Simplex	3000	3335	4930	15-12	-	15000
	3300	3485	5230	15-12	-	15000
	3500	3585	5430	15-12	-	15000
	3700	3685	5630	15-12	-	15000
	4000	3885	5930	15-12	-	15000
	4500	4135	6430	15-12	-	15000
	5000	4385	6930	15-12	-	15000
	5500	4685	7435	15-12	-	15000
	6000	4935	7935	6-6	-	14600
	6500	5235	8485	6-6	-	14200
	7000	5485	8985	6-6	-	13800

FD160N						
Mast Type	h3	h1	h4	tilt angle	h2 / h5 mm	Q @ c=600 mm kg
	mm	mm	mm			
Simplex	3000	3535	5035	15-12	-	16000
	3300	3685	5335	15-12	-	16000
	3500	3785	5535	15-12	-	16000
	3700	3885	5735	15-12	-	16000
	4000	4035	6035	15-12	-	16000
	4500	4285	6535	15-12	-	16000
	5000	4535	7035	15-12	-	16000
	5500	4835	7585	15-12	-	16000
	6000	5085	8085	6-6	-	15800
	6500	5385	8635	6-6	-	15300
	7000	5635	9135	6-6	-	14900



when
reliability
is **everything**

Developed for outstanding performance and genuine value for money, the award-winning* range of Mitsubishi forklift trucks and warehouse equipment is built to a higher specification to maximize productivity and ensure utter reliability... whatever the application.

It's what you'd expect from one of the world's largest corporations whose companies are at the leading edge of technologies where performance, quality and dependability can never be compromised.

It means that, from a single safe source, we can meet 98% of all handling requirements, supplied to you via a range of competitive finance options including outright purchase, rental or leasing. So your local dealer can advise you on precisely the right product for your application... and your budget.

Moreover, because we understand how much you depend on your Mitsubishi forklift truck, we deliver the highest levels of customer support.

Through a network of carefully selected dealerships, we provide quality maintenance and customer care programmes including a choice of warranties that give complete peace of mind. Every dealership holds extensive stocks of manufacturer-approved parts, backed by a central store that holds literally millions of items constantly in stock and achieves a first-pick fulfilled rate of 97%. So your truck can be fixed first time, virtually every time.



* Mitsubishi Forklift Trucks has won **four** separate Fork Lift Truck Association Annual Awards for Excellence covering the areas of **Ergonomics, the Environment and Innovation.**

The term 'Integrated Presence System' (IPS) is intended as a trading style, only to describe a number of design features on the Mitsubishi trucks to which IPS is applied. It does not imply that the truck can be driven without appropriate operator training and without due care and attention. The manufacturer (MCFE, Almere, the Netherlands) cannot accept any responsibility for any accidents or damage caused by incorrect or dangerous use of its equipment.

Drive

- **Powerful Mitsubishi 6M60-TL diesel engine** produces high output and torque for increased productivity.
- **Common rail technology** in combination with electronically controlled fuel injection system, turbo charger, intercooler, exhaust gas recirculation and positive crank case ventilation system allows control of torque, noise and emissions to comply with stage IIIA of exhaust emissions regulations (97/68/EC amended by 2004/26/EC).
- **Powerful cooling system** with efficient aluminium radiator maintains excellent temperature control.
- **In-house manufacture of entire drive train** means perfect compatibility of engine, transmission and front axle.
- **Heavy duty auto-shift transmission** through clutches with large friction area, together with reliable inching, ensures trouble-free operation.

Steering system

- **Robust rear axle** with tapered roller bearings, high-quality seals and fixed tie rods ensures reliability.

Brakes

- **Standard high-performance drum brakes** are air-assisted and hydraulically actuated.
- **Heavy duty, oil-cooled, disc brakes** reduce operational costs in harsh applications (standard on 16 tonne model, optional on all others).

Hydraulics

- **Dependable hydraulic system** uses gear-type hydraulic pump and optimised component layout to reduce build-up of heat in the hydraulic system – for higher efficiency.
- **High-performance hydraulic breather** extends life of vulnerable components in harsh applications.

Electrical and control systems

- **CAN-bus system** together with 32-code fault memory folder makes troubleshooting quick and simple.
- **Integrated Presence System** provides parking brake alarm, seat belt warning light and hydraulic and travel interlock system for added safety.

Operator compartment and controls

- **Wide, high-grip steps and long grab handles** allow easy on-off access from both sides.
- **Full-suspension vinyl seat** is easy to keep clean and keeps driver comfortable through the longest of shifts.
- **Fingertip hydraulic controls** integrated into fully adjustable, comfortable armrest allow effortless precision.
- **Automotive-style pedals** with optimum pedal angle are easy to use and give good control without leg strain.
- **Low noise levels at operator's ear** increase comfort and reduce fatigue.

Other features

- **500-hour service interval** (conditions apply) and long life of components reduces downtime and associated costs.
- **Rapid access features** include easy reach for daily checks, without tilting the cabin and with no need for tools.
- **Standard tilt operator compartment** gives quick and easy entry to all areas for maintenance.

Options

- Deluxe cabin
- Mast attachments
- Air intake options



WIN-EQUIPMENT

WE'RE INDUSTRIAL EQUIPMENT

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NOTE: Performance specifications may vary depending on standard manufacturing tolerances, vehicle condition, types of tyres, floor or surface conditions, applications or operating environment. Trucks may be shown with non-standard options. Specific performance requirements and locally available configurations should be discussed with your distributor of Mitsubishi forklift trucks. Mitsubishi follows a policy of continual product improvement. For this reason, some materials, options and specifications could change without notice.