

PRELIMINARY
SPECIFICATIONS

MOVE THE WORLD FORWARD  MITSUBISHI
HEAVY
INDUSTRIES
GROUP

GRENDiA ES

DIESEL AND LPG COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes

**POWER UP PERFORMANCE...
DRIVE DOWN RUNNING COSTS**

Developed to help your operator achieve maximum productivity, while minimising running costs, GRENDiA ES sets the highest standards for IC engine counterbalance forklift trucks.

SPECIFICATIONS

FD/FG15N	FD/FG25N
FD/FG18N	FD/FG30N
FD/FG20CN	FD/FG35N
FD/FG20N	



**WHEN
RELIABILITY IS
EVERYTHING...**

 **MITSUBISHI
FORKLIFT TRUCKS**

GRENDIA ES

FD / FG15-35(C)N Series

DIESEL AND LPG COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes

With its exceptional fuel economy, durable components and low-maintenance design, GRENDiA makes perfect business sense. What's more, it comes with a package of advanced features, fitted as standard, that offers true value for money.

Fast, stable and exceptionally powerful, GRENDiA forklift trucks offer a potent combination of high efficiency, low emissions and very low noise levels.

To that, Mitsubishi Forklift Trucks has added a host of ergonomic features to maximise comfort, control and precision. The result is a forklift that can be relied upon to deliver top performance, whatever the application, whatever the conditions.

FRAME AND BODY

- **Robust construction** has been designed and rigorously tested to ensure high stability, rigidity and protection.
- **Full belly guard construction** protects engine compartment from any ingress – including dirt, dust and water – for long engine life.
- **Compact design** allows for reduced aisle dimensions, ensuring cost-effective operations.

MAST AND FORK ASSEMBLY

- **Heavy-duty clear-view mast** offers market-leading vision of fork tip and load, for faster cycle times and reduced damage.
- **New bearing high-strength carriage** features six bearings, allowing for quicker load handling.

DRIVE

- **Advanced diesel technology** lowers fuel consumption and ensures complete, clean burning – as well as low noise levels.
- **Three-way catalytic converter** – fitted as standard – significantly reduces exhaust emissions to one of the industry's lowest levels. (LPG models only.)
- **Advanced speed control** – as standard – restricts speed while still maintaining full power on ramps.
- **Engine management controller** allows for simultaneous, multiple engine and electronic functions, resulting in industry-leading fuel consumption and lower emissions.

STEERING SYSTEM

- **Fully hydrostatic steering** is responsive, precise and effortless for the operator and requires little maintenance.
- **Rugged rear axle assembly** with metal bush mounts (instead of competitors' more fragile rubber mounts) is extremely durable.

BRAKES

- **Fully hydrostatic drum brakes** give excellent control with little effort and are easy to maintain.

HYDRAULICS

- **Powerful hydraulic system** offers high residual capacities for comfortable handling of heavier loads.

ELECTRICAL AND CONTROL SYSTEMS

- **Integrated Presence System (IPS)** prevents all movement of the truck and its mast if the operator is not seated, as well as providing a seatbelt warning light and parking brake alarm.
- **PIN code start-up** with driver-specific settings is included as standard to prevent unauthorised or inappropriate use.
- **Onboard diagnostics and detailed fault diagnosis** via computer connection alerts operators and service engineers to problems, speeds up servicing and prevents damage.
- **LED lights** fitted as standard for 'see-and-be-seen' safety.



There is more information on GRENDIA on mitforklift.com

For more extensive information please visit our website mitforklift.com



GRENDIA ES

FD / FG15-35(C)N Series

DIESEL AND LPG COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes



OPERATOR COMPARTMENT AND CONTROLS

- **All-round visibility** together with ergonomic design and layout of all controls improves comfort, reduces fatigue, increases precision and raises productivity.
- **Fully adjustable, full-suspension seat** with hip restraints and safety belt keeps driver comfortable through the longest of shifts.
- **Automotive-style pedals** with optimum pedal angle are easy to use and give good control without leg strain.
- **Adjustable steering column** with memory function helps guarantee optimum driving position, every time.
- **Cowl-mounted hydraulic levers** provide easy-to-reach, easy-to-use control of mast operations.
- **Low noise level** at operator's ear - just 78 dBA and low vibration from powertrain increase comfort and reduce fatigue.

INTEGRATED PRESENCE SYSTEM (IPS) PROVIDES:



- a hydraulic and travel interlock system that prevents all movement of the truck and its mast if the driver is not seated
- a seat belt warning light
- a parking brake alarm

- **Clear, informative meter panel** includes essential warning lights and LCD display with speedometer, clock and dual hour meter.
- **PlusCab panel cabin** offering outstanding visibility through laminates glass, and all-round protection from weather elements.

OTHER FEATURES

- **Rapid access features** give quick and easy entry to all areas for checks and servicing.
- **Long service interval** and choice of high-quality components, together with low-maintenance design, minimises downtime and cost of ownership.
- **Sealed wheel arches** together with belly guard significantly reduces dust emitted during operations for clean performance.



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VDI - PERFORMANCE & DIMENSIONS

CHARACTERISTICS				Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks
1.1	Manufacturer			FD15N	FD18N	FD20CN
1.2	Manufacturer's model designation			Diesel	Diesel	Diesel
1.3	Power source			Seated	Seated	Seated
1.4	Operator type			1500	1750	2000
1.5	Load capacity	Q	kg	500	500	500
1.6	Load center distance	c	mm	400	400	415
1.8	Load distance, axle to fork face	x	mm	1400	1400	1400
1.9	Wheelbase	y	mm			
WEIGHT						
2.1	Truck weight, without load / including battery (simple x mast, lowest lift height)		kg	2530	2720	3030
2.2	Axle loading with maximum load, front / rear (simple x mast, lowest lift height)		kg	3520 / 510	3880 / 590	4330 / 700
2.3	Axle loading without load, front / rear (simple x mast, lowest lift height)		kg	1060 / 1470	1000 / 1720	1020 / 2010
WHEELS, DRIVE TRAIN						
3.1	Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front / rear			L / L	L / L	SE / SE
3.2	Tyre dimensions, front			6.50 - 10 - 10PR	6.50 - 10 - 10PR	6.50 - 10 / 5.00
3.3	Tyre dimensions, rear			5.00 - 8 - 8PR	5.00 - 8 - 8PR	5.00 - 8 / 3.00
3.5	Number of wheels, front / rear (x =driven)			2 x / 2	2 x / 2	2 x / 2
3.6	Track width (centre of tyres), front	b10	mm	890	890	890
3.7	Track width (centre of tyres), rear	b11	mm	900	900	900
DIMENSIONS						
4.1	Mast tilt, forwards / backwards			6 / 10	6 / 10	6 / 10
4.2	Height with mast lowered (see tables)	h1	mm	2140	2140	2140
4.3	Free lift (see tables)			115	115	115
4.4	Lift height (see tables)	h3	mm	3290	3290	3290
4.5	Overall height with mast raised	h4	mm	4340	4340	4340
4.7	Height to top of overhead guard			2140	2140	2140
4.8	Seat height	h7	mm	930	930	930
4.12	Tow coupling height	h10	mm	290	290	290
4.19	Overall length	l1	mm	3330	3370	3425
4.20	Length to fork face (includes fork thickness)	l2	mm	2260	2300	2355
4.21	Overall width	b1/b2	mm	1065 / -	1065 / -	1065 / -
4.22	Fork dimensions (thickness, width, length)	s / e / l	mm	35 x 100 x 1070	35 x 100 x 1070	35 x 100 x 1070
4.23	Fork carriage to DIN 15173 A / B / no			2A	2A	2A
4.24	Fork carriage width	b3	mm	920	920	920
4.31	Ground clearance under mast, with load	m1	mm	110	110	110
4.32	Ground clearance at centre of wheelbase, with load (forks lowered)	m2	mm	135	135	135
4.33	Working aisle width with 1000 x 1200 mm pallets, crosswise	Ast	mm	3550	3580	3635
4.34a	Working aisle width with 800 x 1200 mm pallets, crosswise	Ast	mm	3350	3380	3435
4.34b	Working aisle width with 800 x 1200 mm pallets, lengthwise	Ast	mm	3750	3780	3835
4.35	Turning circle radius	Wa	mm	1950	1980	2020
4.36	Minimum distance between centres of rotation	b13	mm	555	555	555
PERFORMANCE						
5.1	Travel speed, with / without load		km/h	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5
5.2	Lifting speed, with / without load		m/s	0.60 / 0.65	0.60 / 0.65	0.60 / 0.65
5.3	Lowering speed, with / without load		m/s	0.52 / 0.50	0.52 / 0.50	0.52 / 0.50
5.5	Rated drawbar pull, with / without load		N	12300 / 11900	12200 / 11900	11800 / 11900
5.6	Maximum drawbar pull, with / without load (5 min short duty)		N	- / -	- / -	- / -
5.7	Gradeability, with / without load		%	32 / 54	29 / 49	25 / 43
5.8	Maximum gradeability with / without load		%	- / -	- / -	- / -
5.9	Acceleration time (10 metres) with / without load		s	- / -	- / -	- / -
5.10	Service brakes (mechanical / hydraulic / electric / pneumatic)			Hydraulic	Hydraulic	Hydraulic
IC ENGINE						
7.1	Manufacturer / Type			Mitsubishi S4Q2	Mitsubishi S4Q2	Mitsubishi S4Q2
7.2	Rated output to ISO 1585 (Gross output)		kW	28	28	28
7.3	Rated speed to DIN 70020		rpm	2500	2500	2500
7.4	Number of cylinders / cubic capacity		cm ³	4 / 2505	4 / 2505	4 / 2505
7.5	Fuel consumption according to VDI 60 1)		l/h/kg/h	2.30 / -	2.35 / -	2.35 / -
7.6a	Max torque		Nm	131	131	131
7.7a	Max torque at engine speed		rpm	1800	1800	1800
MISCELLANEOUS						
8.1	Type of drive control			Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1
10.1	Maximum operating pressure for attachments		bar	180	180	180
10.2	Oil flow for attachments		l/min	191	191	191
10.7	Noise level, value at operator's ear (EN 12053)		dB(A)	80	80	80
10.8	Towing coupling, type DIN 15170			Pin	Pin	Pin

GRENDIA ES

**DIESEL
COUNTERBALANCE**

FD15 - 20(C)N

1.5 – 2.0 tonnes



VDI - PERFORMANCE & DIMENSIONS

CHARACTERISTICS				Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks
1.1	Manufacturer			FD20N	FD25N	FD30N	FD35N
1.2	Manufacturer's model designation			Diesel	Diesel	Diesel	Diesel
1.3	Power source			Seated	Seated	Seated	Seated
1.4	Operator type			2000	2500	3000	3500
1.5	Load capacity	Q	kg	500	500	500	500
1.6	Load center distance	c	mm	455	460	495	495
1.8	Load distance, axle to fork face	x	mm	1600	1600	1700	1700
1.9	Wheelbase	y	mm				
WEIGHT							
2.1	Truck weight, without load / including battery (simple x mast, lowest lift height)		kg	3380	3680	4350	4740
2.2	Axle loading with maximum load, front / rear (simple x mast, lowest lift height)		kg	4640 / 740	5430 / 750	6510 / 840	7220 / 1020
2.3	Axle loading without load, front / rear (simple x mast, lowest lift height)		kg	1450 / 1930	1430 / 2250	1750 / 2600	1670 / 3070
WHEELS, DRIVE TRAIN							
3.1	Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front / rear			L / L	L / L	L / L	L / L
3.2	Tyre dimensions, front			7.00 - 12 - 12PR	7.00 - 12 - 12PR	28x9 - 15 - 12PR	250 - 15 - 12PR
3.3	Tyre dimensions, rear			6.00 - 9 - 10PR	6.00 - 9 - 10PR	6.50 - 10 - 10PR	6.50 - 10 - 10PR
3.5	Number of wheels, front / rear (x=driven)			2 x / 2	2 x / 2	2 x / 2	2 x / 2
3.6	Track width (centre of tyres), front	b10	mm	960	960	1060	1060
3.7	Track width (centre of tyres), rear	b11	mm	980	980	980	980
DIMENSIONS							
4.1	Mast tilt, forwards / backwards			6 / 10	6 / 10	6 / 10	6 / 10
4.2	Height with mast lowered (see tables)	h1	mm	2150	2150	2170	2300
4.3	Free lift (see tables)			140	140	145	145
4.4	Lift height (see tables)	h3	mm	3300	3300	3270	3300
4.5	Overall height with mast raised	h4	mm	4360	4360	4330	4360
4.7	Height to top of overhead guard			2145	2145	2165	2175
4.8	Seat height	h7	mm	940	940	990	990
4.12	Tow coupling height	h10	mm	310	310	330	340
4.19	Overall length	l1	mm	3555	3630	3805	3865
4.20	Length to fork face (includes fork thickness)	l2	mm	2485	2560	2735	2795
4.21	Overall width	b1/b2	mm	1150 / 1640	1150 / 1640	1275 / 1690	1290 / 1690
4.22	Fork dimensions (thickness, width, length)	s / e / l	mm	40 x 100 x 1070	40 x 100 x 1070	45 x 125 x 1070	45 x 125 x 1070
4.23	Fork carriage to DIN 15173 A / B / no			2A	2A	3A	3A
4.24	Fork carriage width	b3	mm	1000	1000	1000	1000
4.31	Ground clearance under mast, with load	m1	mm	115	115	135	150
4.32	Ground clearance at centre of wheelbase, with load (forks lowered)	m2	mm	135	135	165	170
4.33	Working aisle width with 1000 x 1200 mm pallets, crosswise	Ast	mm	3855	3890	4075	4135
4.34a	Working aisle width with 800 x 1200 mm pallets, crosswise	Ast	mm	3655	3690	3875	3935
4.34b	Working aisle width with 800 x 1200 mm pallets, lengthwise	Ast	mm	4055	4090	4275	4335
4.35	Turning circle radius	Wa	mm	2200	2230	2380	2440
4.36	Minimum distance between centres of rotation	b13	mm	715	715	780	780
PERFORMANCE							
5.1	Travel speed, with / without load		km/h	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5
5.2	Lifting speed, with / without load		m/s	0.64 / 0.67	0.64 / 0.67	0.51 / 0.54	0.43 / 0.46
5.3	Lowering speed, with / without load		m/s	0.50 / 0.50	0.50 / 0.50	0.53 / 0.50	0.42 / 0.40
5.5	Rated drawbar pull, with / without load		N	17700 / 17300	17700 / 17200	18200 / 18000	16500 / 16600
5.6	Maximum drawbar pull, with / without load (5 min short duty)		N	- / -	- / -	- / -	- / -
5.7	Gradeability, with / without load		%	35 / 60	30 / 54	26 / 46	21 / 38
5.8	Maximum gradeability with / without load		%	- / -	- / -	- / -	- / -
5.9	Acceleration time (10 metres) with / without load		s	- / -	- / -	- / -	- / -
5.10	Service brakes (mechanical / hydraulic / electric / pneumatic)			Hydraulic	Hydraulic	Hydraulic	Hydraulic
IC ENGINE							
7.1	Manufacturer / Type			Mitsubishi S4S	Mitsubishi S4S	Mitsubishi S4S	Mitsubishi S4S
7.2	Rated output to ISO 1585 (Gross output)		kW	35.3	35.3	35.3	35.3
7.3	Rated speed to DIN 70020		rpm	2250	2250	2250	2250
7.4	Number of cylinders / cubic capacity		cm ³	4 / 3331	4 / 3331	4 / 3331	4 / 3331
7.5	Fuel consumption according to VDI 60 1)		l/h/kg/h	2.55 / -	3.20 / -	3.40 / -	3.50 / -
7.6a	Max torque		Nm	185	185	185	185
7.7a	Max torque at engine speed		rpm	1700	1700	1700	1700
MISCELLANEOUS							
8.1	Type of drive control			Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1
10.1	Maximum operating pressure for attachments		bar	180	180	180	180
10.2	Oil flow for attachments		l/min	191	191	191	191
10.7	Noise level, value at operator's ear (EN 12053)		dB(A)	78	78	78	78
10.8	Towing coupling, type DIN 15170			Pin	Pin	Pin	Pin

GRENDIA ES

**DIESEL
COUNTERBALANCE**

FD20 - 35N

2.0 – 3.5 tonnes



VDI - PERFORMANCE & DIMENSIONS

CHARACTERISTICS				Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks
1.1	Manufacturer			FG15N	FG18N	FG20CN
1.2	Manufacturer's model designation			LPG	LPG	LPG
1.3	Power source			Seated	Seated	Seated
1.4	Operator type			1500	1750	2000
1.5	Load capacity	Q	kg	500	500	500
1.6	Load center distance	c	mm	400	400	415
1.8	Load distance, axle to fork face	x	mm	1400	1400	1400
1.9	Wheelbase	y	mm			
WEIGHT						
2.1	Truck weight, without load / including battery (simple x mast, lowest lift height)		kg	2490	2690	3010
2.2	Axle loading with maximum load, front / rear (simple x mast, lowest lift height)		kg	3510 / 460	3870 / 540	4320 / 660
2.3	Axle loading without load, front / rear (simple x mast, lowest lift height)		kg	1040 / 1430	990 / 1670	1010 / 1970
WHEELS, DRIVE TRAIN						
3.1	Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front / rear			L / L	L / L	SE / SE
3.2	Tyre dimensions, front			6.50 - 10 - 10PR	6.50 - 10 - 10PR	6.50 - 10 / 5.00
3.3	Tyre dimensions, rear			5.00 - 8 - 8PR	5.00 - 8 - 8PR	5.00 - 8 / 3.00
3.5	Number of wheels, front / rear (x =driven)			2 x / 2	2 x / 2	2 x / 2
3.6	Track width (centre of tyres), front	b10	mm	890	890	890
3.7	Track width (centre of tyres), rear	b11	mm	900	900	900
DIMENSIONS						
4.1	Mast tilt, forwards / backwards			6 / 10	6 / 10	6 / 10
4.2	Height with mast lowered (see tables)	h1	mm	2140	2140	2140
4.3	Free lift (see tables)			115	115	115
4.4	Lift height (see tables)	h3	mm	3290	3290	3290
4.5	Overall height with mast raised	h4	mm	4340	4340	4340
4.7	Height to top of overhead guard			2140	2140	2140
4.8	Seat height	h7	mm	930	930	930
4.12	Tow coupling height	h10	mm	290	290	290
4.19	Overall length	l1	mm	3330	3370	3425
4.20	Length to fork face (includes fork thickness)	l2	mm	2260	2300	2355
4.21	Overall width	b1/b2	mm	1065 / -	1065 / -	1065 / -
4.22	Fork dimensions (thickness, width, length)	s / e / l	mm	35 x 100 x 1070	35 x 100 x 1070	35 x 100 x 1070
4.23	Fork carriage to DIN 15173 A / B / no			2A	2A	2A
4.24	Fork carriage width	b3	mm	920	920	920
4.31	Ground clearance under mast, with load	m1	mm	110	110	110
4.32	Ground clearance at centre of wheelbase, with load (forks lowered)	m2	mm	135	135	135
4.33	Working aisle width with 1000 x 1200 mm pallets, crosswise	Ast	mm	3550	3580	3635
4.34a	Working aisle width with 800 x 1200 mm pallets, crosswise	Ast	mm	3350	3380	3435
4.34b	Working aisle width with 800 x 1200 mm pallets, lengthwise	Ast	mm	3750	3780	3835
4.35	Turning circle radius	Wa	mm	1950	1980	2020
4.36	Minimum distance between centres of rotation	b13	mm	555	555	555
PERFORMANCE						
5.1	Travel speed, with / without load		km/h	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5
5.2	Lifting speed, with / without load		m/s	0.64 / 0.65	0.64 / 0.65	0.64 / 0.65
5.3	Lowering speed, with / without load		m/s	0.52 / 0.50	0.52 / 0.50	0.52 / 0.50
5.5	Rated drawbar pull, with / without load		N	17400 / 16900	17400 / 16800	17300 / 17100
5.6	Maximum drawbar pull, with / without load (5 min short duty)		N	- / -	- / -	- / -
5.7	Gradeability, with / without load		%	49 / 93	43 / 81	37 / 70
5.8	Maximum gradeability with / without load		%	- / -	- / -	- / -
5.9	Acceleration time (10 metres) with / without load		s	- / -	- / -	- / -
5.10	Service brakes (mechanical / hydraulic / electric / pneumatic)			Hydraulic	Hydraulic	Hydraulic
IC ENGINE						
7.1	Manufacturer / Type			GCT GK21E	GCT GK21E	GCT GK21E
7.2	Rated output to ISO 1585 (Gross output)		kW	41	41	41
7.3	Rated speed to DIN 70020		rpm	2700	2700	2700
7.4	Number of cylinders / cubic capacity		cm ³	4 / 2065	4 / 2065	4 / 2065
7.5	Fuel consumption according to VDI 60 1)		l/h/kg/h	- / 2.10	- / 2.40	- / 2.40
7.6a	Max torque		Nm	151	151	151
7.7a	Max torque at engine speed		rpm	1800	1800	1800
MISCELLANEOUS						
8.1	Type of drive control			Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1
10.1	Maximum operating pressure for attachments		bar	180	180	180
10.2	Oil flow for attachments		l/min	60	60	60
10.7	Noise level, value at operator's ear (EN 12053)		dB(A)	79	79	79
10.8	Towing coupling, type DIN 15170			Pin	Pin	Pin

GRENDIA ES

**LPG
COUNTERBALANCE**

FG15 - 20(C)N

1.5 – 2.0 tonnes



VDI - PERFORMANCE & DIMENSIONS

CHARACTERISTICS				Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks	Mitsubishi Forklift Trucks
1.1	Manufacturer			FG20N	FG25N	FG30N	FG35N
1.2	Manufacturer's model designation			LPG	LPG	LPG	LPG
1.3	Power source			Seated	Seated	Seated	Seated
1.4	Operator type			2000	2500	3000	3500
1.5	Load capacity	Q	kg	500	500	500	500
1.6	Load center distance	c	mm	455	460	495	495
1.8	Load distance, axle to fork face	x	mm	1600	1600	1700	1700
1.9	Wheelbase	y	mm				
WEIGHT							
2.1	Truck weight, without load / including battery (simple x mast, lowest lift height)		kg	3300	3600	4240	4630
2.2	Axle loading with maximum load, front / rear (simple x mast, lowest lift height)		kg	4600 / 670	5390 / 680	6470 / 770	7180 / 950
2.3	Axle loading without load, front / rear (simple x mast, lowest lift height)		kg	1410 / 1860	1390 / 2180	1710 / 2530	1630 / 3000
WHEELS, DRIVE TRAIN							
3.1	Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front / rear			L / L	L / L	L / L	L / L
3.2	Tyre dimensions, front			7.00 - 12 - 12PR	7.00 - 12 - 12PR	28x9 - 15 - 12PR	250 - 15 - 12PR
3.3	Tyre dimensions, rear			6.00 - 9 - 10PR	6.00 - 9 - 10PR	6.50 - 10 - 10PR	6.50 - 10 - 10PR
3.5	Number of wheels, front / rear (x =driven)			2 x / 2	2 x / 2	2 x / 2	2 x / 2
3.6	Track width (centre of tyres), front	b10	mm	960	960	1060	1060
3.7	Track width (centre of tyres), rear	b11	mm	980	980	980	980
DIMENSIONS							
4.1	Mast tilt, forwards / backwards			6 / 10	6 / 10	6 / 10	6 / 10
4.2	Height with mast lowered (see tables)	h1	mm	2150	2150	2170	2300
4.3	Free lift (see tables)			140	140	145	145
4.4	Lift height (see tables)	h3	mm	3300	3300	3270	3300
4.5	Overall height with mast raised	h4	mm	4360	4360	4330	4360
4.7	Height to top of overhead guard			2145	2145	2165	2175
4.8	Seat height	h7	mm	940	940	990	990
4.12	Tow coupling height	h10	mm	310	310	330	340
4.19	Overall length	l1	mm	3555	3630	3805	3865
4.20	Length to fork face (includes fork thickness)	l2	mm	2485	2560	2735	2795
4.21	Overall width	b1/b2	mm	1150 / 1640	1150 / 1640	1275 / 1690	1290 / 1690
4.22	Fork dimensions (thickness, width, length)	s / e / l	mm	40 x 100 x 1070	40 x 100 x 1070	45 x 125 x 1070	45 x 125 x 1070
4.23	Fork carriage to DIN 15173 A / B / no			2A	2A	3A	3A
4.24	Fork carriage width	b3	mm	1000	1000	1000	1000
4.31	Ground clearance under mast, with load	m1	mm	115	115	135	150
4.32	Ground clearance at centre of wheelbase, with load (forks lowered)	m2	mm	135	135	165	170
4.33	Working aisle width with 1000 x 1200 mm pallets, crosswise	Ast	mm	3855	3890	4075	4135
4.34a	Working aisle width with 800 x 1200 mm pallets, crosswise	Ast	mm	3655	3690	3875	3935
4.34b	Working aisle width with 800 x 1200 mm pallets, lengthwise	Ast	mm	4055	4090	4275	4335
4.35	Turning circle radius	Wa	mm	2200	2230	2380	2440
4.36	Minimum distance between centres of rotation	b13	mm	715	715	780	780
PERFORMANCE							
5.1	Travel speed, with / without load		km/h	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5	19.0 / 19.5
5.2	Lifting speed, with / without load		m/s	0.59 / 0.61	0.59 / 0.61	0.52 / 0.53	0.43 / 0.44
5.3	Lowering speed, with / without load		m/s	0.50 / 0.50	0.50 / 0.50	0.53 / 0.50	0.42 / 0.40
5.5	Rated drawbar pull, with / without load		N	17100 / 16800	17100 / 16700	21800 / 21400	19900 / 19800
5.6	Maximum drawbar pull, with / without load (5 min short duty)		N	- / -	- / -	- / -	- / -
5.7	Gradeability, with / without load		%	35 / 60	30 / 53	32 / 60	26 / 48
5.8	Maximum gradeability with / without load		%	- / -	- / -	- / -	- / -
5.9	Acceleration time (10 metres) with / without load		s	- / -	- / -	- / -	- / -
5.10	Service brakes (mechanical / hydraulic / electric / pneumatic)			Hydraulic	Hydraulic	Hydraulic	Hydraulic
IC ENGINE							
7.1	Manufacturer / Type			GCT GK21E	GCT GK21E	GCT GK25E	GCT GK25E
7.2	Rated output to ISO 1585 (Gross output)		kW	41	41	46.9	46.9
7.3	Rated speed to DIN 70020		rpm	2700	2700	2700	2700
7.4	Number of cylinders / cubic capacity		cm ³	4 / 2065	4 / 2065	4 / 2488	4 / 2488
7.5	Fuel consumption according to VDI 60 1)		l/h/kg/h	- / 2.55	- / 3.20	- / 3.10	- / 3.50
7.6a	Max torque		Nm	151	151	188	188
7.7a	Max torque at engine speed		rpm	1800	1800	1600	1600
MISCELLANEOUS							
8.1	Type of drive control			Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1	Powershift 1 / 1
10.1	Maximum operating pressure for attachments		bar	180	180	180	180
10.2	Oil flow for attachments		l/min	73	73	73	73
10.7	Noise level, value at operator's ear (EN 12053)		dB(A)	79	79	79	79
10.8	Towing coupling, type DIN 15170			Pin	Pin	Pin	Pin

GRENDIA ES

**LPG
COUNTERBALANCE**

FG20 - 35N

2.0 – 3.5 tonnes



MAST PERFORMANCE AND CAPACITY

GRENDIA ES

FD / FG15-20(C)N

MAST TYPE	FD/FG15N-18N FD/FG20CN			FD/FG15N		FD/FG18N		FD/FG20CN	
	h3 mm	h1 mm	h4 mm	h2 / h5 mm	Q@ c=500mm kg	h2 / h5 mm	Q@ c=500mm kg	h2 / h5 mm	Q@ c=500mm kg
SIMPLEX	3000	1990	4055	80 - 1500	80 - 1500	80 - 1750	80 - 2000	80 - 2000	80 - 2000
	3300	2140	4355	80 - 1500	80 - 1500	80 - 1750	80 - 2000	80 - 2000	80 - 2000
	3500	2240	4555	80 - 1500	80 - 1500	80 - 1750	80 - 2000	80 - 2000	80 - 2000
	3700	2340	4755	80 - 1500	80 - 1500	80 - 1750	80 - 2000	80 - 2000	80 - 2000
	4000	2540	5055	80 - 1500	80 - 1500	80 - 1750	80 - 1950	80 - 1950	80 - 1950
	4500	2790	5555	80 - 1425	80 - 1700	80 - 1700	80 - 1400	80 - 1400	80 - 1400
	5000	3050	6055	80 - 1375	80 - 1600*	-	-	-	-
	5500	3300	6555	80 - 1250*	80 - 1525*	-	-	-	-
6000	3550	7055	80 - 1200*	80 - 1325*	-	-	-	-	
DUPLEX	3000	1995	4055	- 940 1500	- 940 1500	- 940 1750	- 940 2000	- 940 2000	- 940 2000
	3290	2140	4350	- 1085 1500	- 1085 1750	- 1085 2000	- 1085 2000	- 1085 2000	- 1085 2000
	3510	2260	4570	- 1205 1500	- 1205 1750	- 1205 2000	- 1205 2000	- 1205 2000	- 1205 2000
	4030	2585	5085	- 1530 1500	- 1530 1750	- 1530 2000	- 1530 2000	- 1530 2000	- 1530 2000
TRIPLEX	3700	1790	4755	- 735 1500	- 735 1750	- 735 2000	- 735 2000	- 735 2000	- 735 2000
	4000	1890	5055	- 835 1475	- 835 1750	- 835 2000	- 835 2000	- 835 2000	- 835 2000
	4300	1990	5355	- 935 1425	- 935 1700	- 935 1950	- 935 1950	- 935 1950	- 935 1950
	4700	2140	5755	- 1085 1375	- 1085 1625*	- 1085 1900	- 1085 1900	- 1085 1900	- 1085 1900
	5000	2240	6055	- 1185 1325	- 1185 1575*	- 1185 1325	- 1185 1325	- 1185 1325	- 1185 1325
	5500	2430	6555	- 1375 1250*	- 1375 1500*	-	-	-	-
	6000	2610	7055	- 1555 1175*	- 1555 1325*	-	-	-	-
	6500	2850	7555	- 1759 950	- 1759 950*	-	-	-	-
7000	3050	8055	- 1995 650*	- 1995 650*	-	-	-	-	

Note: All models with SE tires
Note: * with dual-drive front wheels
See Mast Charts for applicable tilt angle limitations

FD / FG20-25N

MAST TYPE	FD/FG20N FD/FG25N			FD/FG20N		FD/FG25N	
	h3 mm	h1 mm	h4 mm	h2 / h5 mm	Q@ c=500mm kg	h2 / h5 mm	Q@ c=500mm kg
SIMPLEX	3000	1995	4055	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	3300	2145	4345	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	3500	2245	4555	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	3700	2345	4755	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	4000	2545	5055	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	4500	2795	5555	100 - 2000	100 - 2500	100 - 2500	100 - 2500
	5000	3065	6055	100 - 1950	100 - 2400	100 - 2400	100 - 2400
	5500	3315	6555	100 - 1850*	100 - 2250*	100 - 2250*	100 - 2250*
6000	3565	7055	100 - 1800*	100 - 2150*	100 - 2150*	100 - 2150*	
DUPLEX	3000	1995	4055	- 935 2000	- 940 2500	- 940 2500	- 940 2500
	3300	2145	4350	- 1085 2000	- 1090 2500	- 1090 2500	- 1090 2500
	3530	2265	4585	- 1205 2000	- 1210 2500	- 1210 2500	- 1210 2500
	4020	2590	5075	- 1530 2000	- 1535 2500	- 1535 2500	- 1535 2500
TRIPLEX	3700	1795	4755	- 735 2000	735 - 2500	735 - 2500	735 - 2500
	4000	1895	5055	- 835 2000	835 - 2500	835 - 2500	835 - 2500
	4300	1995	5355	- 935 2000	935 - 2500	935 - 2500	935 - 2500
	4700	2145	5755	- 1085 1950	1085 - 2400	1085 - 2400	1085 - 2400
	5000	2245	6055	- 1185 1900	1185 - 2350	1185 - 2350	1185 - 2350
	5500	2415	6555	- 1355 1800	1355 - 2200*	1355 - 2200*	1355 - 2200*
	6000	2585	7055	- 1525 1750*	1525 - 2100*	1525 - 2100*	1525 - 2100*
	6500	2795	7555	- 1735 1650*	1735 - 1750*	1735 - 1750*	1735 - 1750*
7000	3065	8055	- 2005 1250*	2005 - 1250*	2005 - 1250*	2005 - 1250*	

All dimensions include load backrest.
In case load backrest is not used h5 will increase by 390mm (20N, 25N), 350mm (30N), 240mm (35N), while h4 will decrease by 390mm (20N, 25N), 350mm (30N), 240mm (35N).
The capacities apply to pneumatic shaped solid tyres (SE).

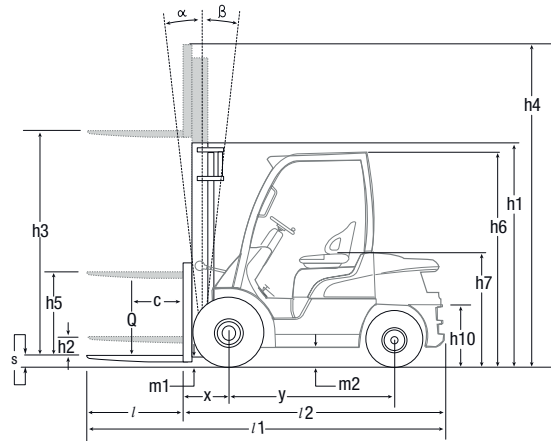
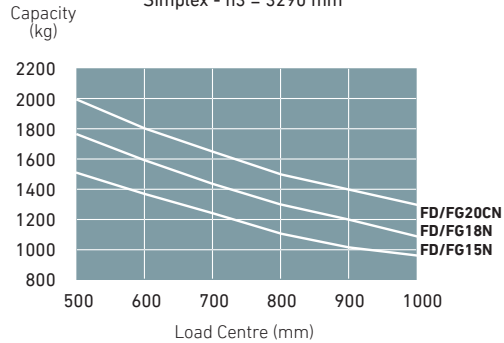
FD / FG30-35N

MAST TYPE	FD/FG30N					FD/FG35N				
	h3 mm	h1 mm	h4 mm	h2 / h5 mm	Q@ c=500mm kg	h3 mm	h1 mm	h4 mm	h2 / h5 mm	Q@ c=500mm kg
SIMPLEX	3000	2015	4055	95 - 3000	3000	2130	4055	95 - 3500	3000	2130
	3300	2165	4355	95 - 3000	3300	2280	4355	95 - 3500	3300	2280
	3500	2265	4555	95 - 3000	3500	2380	4555	95 - 3500	3500	2380
	3700	2365	4755	95 - 3000	3700	2480	4755	95 - 3500	3700	2480
	4000	2565	5055	95 - 3000	4000	2680	5055	95 - 3500	4000	2680
	4500	2815	5555	95 - 3000	4500	2930	5555	95 - 3500	4500	2930
	5000	3115	6055	95 - 2900	5000	3230	6055	95 - 3500	5000	3230
	5500	3365	6555	95 - 2800	5500	3480	6555	95 - 3350	5500	3480
6000	3615	7055	95 - 2700	6000	3730	7055	95 - 3250	6000	3730	
DUPLEX	3000	2045	4055	- 940 3000	3010	2180	4065	- 1125 3500	3010	2180
	3250	2165	4305	- 1090 3000	3300	2300	4355	- 1245 3500	3300	2300
	3490	2285	4545	- 1210 3000	3500	2445	4555	- 1390 3500	3500	2445
	4010	2610	5065	- 1535 3000	4000	2765	5055	- 1710 3500	4000	2765
TRIPLEX	3700	1815	4755	- 760 3000	3700	1930	4755	- 875 3500	3700	1930
	4000	1915	5055	- 860 3000	4000	2030	5055	- 975 3500	4000	2030
	4300	2015	5355	- 960 3000	4300	2130	5355	- 1075 3500	4300	2130
	4700	2165	5755	- 1110 3000	4700	2280	5755	- 1225 3500	4700	2280
	5000	2265	6055	- 1210 2900	5000	2380	6055	- 1325 3450	5000	2380
	5500	2435	6555	- 1380 2800	5500	2550	6555	- 1495 3300	5500	2550
	6000	2605	7055	- 1550 2700	6000	2720	7055	- 1665 3200	6000	2720
	6500	2815	7555	- 1760 2350	6500	2930	7555	- 1875 2350	6500	2930
7000	3115	8055	- 2060 1600	7000	3230	8055	- 2175 1600	7000	3230	

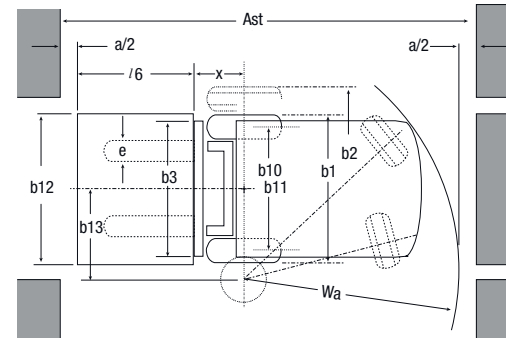
FD/FG15-20(C)N Models

Capacities at various load centres

Simplex - h3 = 3290 mm



- 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)



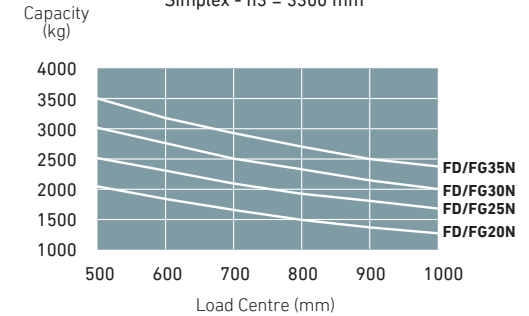
$$Ast = Wa + x + l6 + a$$

- Ast = Working aisle width
- Wa = Turning radius
- a = Safety clearance = 2 x 100 mm
- l6 = Pallet length
- b12 = Pallet width

FD/FG20-35N Models

Capacities at various load centres

Simplex - h3 = 3300 mm



STANDARD EQUIPMENT & OPTIONS

● = Standard
● = Option

	FD15-18N	FD20CN	FD20-25N	FD30-35N	FG15-18N	FG20CN	FG20-25N	FG30-35N
GENERAL	DIESEL				LPG			
Dust proof kit	●	●	●	●	●	●	●	●
Line filter for torque converter	●	●	●	●	●	●	●	●
Universal joint cover powertrain	●	●	●	●	●	●	●	●
LPG bracket removed					●	●	●	●
LPG Swing down bracket, no tank					●	●	●	●
Tilt cylinder boot kit	●	●	●	●	●	●	●	●
Lifting eyes mounted on counter weight	●	●	●	●	●	●	●	●
Belly plate (under cover)	●	●	●	●	●	●	●	●
Large capacity battery	●	●	●	●	●	●	●	●
HYDRAULIC								
3-way control valve MC	●	●	●	●	●	●	●	●
3-way control valve FC	●	●	●	●	●	●	●	●
4-way control valve MC	●	●	●	●	●	●	●	●
4-way control valve FC	●	●	●	●	●	●	●	●
MAST, FORKS AND CARRIAGE								
Loose mast	●	●	●	●	●	●	●	●
Lifting eye for mast	●	●	●	●	●	●	●	●
Heavy Load side roller (*Cannot be combined with an integral sideshifter)	●	●	●	●	●	●	●	●
Side shifter 920 mm	●	●			●	●		
Side shifter 1000 mm			●	●			●	●
Integral side shifter 920 mm	●	●			●	●		
Integral side shifter 1000 mm			●	●			●	●
Fork deletion	●	●	●	●	●	●	●	●
ELECTRIC								
Backup handle with horn button	●	●	●	●	●	●	●	●
Electric diesel control (Diesel)	●	●	●	●				
Speed control system (LPG)					●	●	●	●
Indicator kit	●	●	●	●	●	●	●	●
LED light set	●	●	●	●	●	●	●	●
LED rear work light	●	●	●	●	●	●	●	●
Load weight indicator (for simplex & triplex masts)	●	●	●	●	●	●	●	●
Rotating beacon (orange)	●	●	●	●	●	●	●	●
Strobe light (orange)	●	●	●	●	●	●	●	●
FNR switch on adjustable armrest (*Standard on FC models)	●	●	●	●	●	●	●	●

GRENDIA ES

FD / FG15-35(C)N Series

DIESEL AND LPG

COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes



Informative LCD display.



Clear-view mast



Easy service access



LED rear work light.

STANDARD EQUIPMENT & OPTIONS

● = Standard
● = Option

	FD15-18N	FD20CN	FD20-25N	FD30-35N	FG15-18N	FG20CN	FG20-25N	FG30-35N
OHG AND CABIN	DIESEL				LPG			
Grammer MSG 65 Vinyl seat	●	●	●	●	●	●	●	●
Grammer MSG 65 Cloth seat	●	●	●	●	●	●	●	●
Armrest LH side (for FC models)	●	●	●	●	●	●	●	●
Armrest LH side (for MC models)	●	●	●	●	●	●	●	●
Armrest RH side (for FC models)	●	●	●	●	●	●	●	●
Armrest RH side (for MC models)	●	●	●	●	●	●	●	●
Rear view mirrors	●	●	●	●	●	●	●	●
Convenience tray	●	●	●	●	●	●	●	●
Panel cabin	●	●	●	●	●	●	●	●
TYRES								
Solid pneumatic tyres	●	●	●	●	●	●	●	●
Pneumatic tyres	●	●	●	●	●	●	●	●
Solid pneumatic dual drive tyres	●	●	●	●	●	●	●	●
Pneumatic dual drive tyres	●	●	●	●	●	●	●	●
ENVIRONMENT								
Single element air cleaner	●	●	●	●	●	●	●	●
Double element air cleaner	●	●	●	●	●	●	●	●
Elevated exhaust	●	●	●	●	●	●	●	●
Catalytic exhaust muffler	●	●	●	●	●	●	●	●

Contact your dealer for additional standard and optional equipment.

GRENDIA ES FD / FG15-35(C)N Series DIESEL AND LPG COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes



Steering directional control lever on the steering wheel (optional)



Solid pneumatic dual drive tyres



Fingertip hydraulic controls (optional)



MC levers



PlusCab panel cabin

WHEN RELIABILITY IS EVERYTHING...



GRENDIA
THE GREEN DIAMOND

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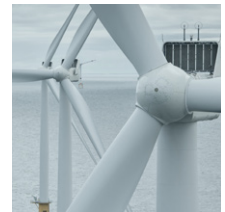
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Performance specifications may vary depending on standard manufacturing tolerances, vehicle condition, types of tyres, floor or surface conditions, applications or operating environment. Trucks may be shown with non-standard options. Specific performance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

mitforklift@mcfe.nl

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