

MAINTENANCE



CENTRALIZED MAINTENANCE POINTS FOR EASY INSPECTION AND MAINTENANCE

Inspection and maintenance is made easy thanks to a fully extendable engine hood, removable side covers and centralized maintenance points. In addition, the time intervals between oil changes and lubrication requirements have been increased, resulting in lower maintenance costs.



*Ready to Perform
To Your Applications*



www.mitforklift.com.sg

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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 Mitsubishi forklift truck dealers. Mitsubishi Forklift Trucks follows a policy of continual product improvement. For this reason, some materials, options and specifications could change without notice.



PRESENTED BY:



GRENDIA

Internal Combustion Pneumatic Tyre
1.0–3.5 ton

SETTING NEW STANDARDS

Mitsubishi

GRENDIA

Series Forklift Trucks



FGE15N

Electronically controlled gasoline engine
Capacity rating 1500kg @ 500mm load center

A next generation, higher performance machine.

Thanks to the application of new technologies, the Mitsubishi Grendia is not only easier to operate but friendly to the environment as well.

The new Mitsubishi Grendia's engine is very fuel-efficient and has ultra low emissions, which either complies with or exceeds the latest international environmental standards. In addition to its newly designed engine, Mitsubishi Forklift Trucks has increased rider comfort and enhanced safety. For instance, all Grendia forklift trucks incorporate an Integrated Presence System (IPS), which enhances safety and helps reduce accidents. LCD graphic displays and digital monitoring systems also make the Grendia safer and more efficient.

It's the forklift of tomorrow that's available today.

MOVING AHEAD

FD25N

Diesel engine

Capacity rating 2500kg @ 500mm load center



<http://trucksfreemanuals.com>

GRENDIA'S ECO-POWER

**MEETS THE ENVIRONMENTAL REQUIREMENTS OF
TODAY AND TOMORROW.**



NEW 2007 EMISSION STANDARDS COMPLIANT*: NEW ELECTRONICALLY CONTROLLED GASOLINE ENGINE

Mitsubishi Grendia's advanced gasoline engine, which helped pioneer the standard use of electronically controlled fuel injection and three-way catalytic converters in forklift trucks, has evolved even further. The new Grendia has achieved remarkable environmental controls and complies with all 2007 Emission Standards while still maintaining high performance and reliability levels.

* 2007 Emissions Standard for Specific Special Vehicles (including off-road vehicles)
Compliant with Emissions Standard for Specific Special Vehicles
Ministry of the Environment
Ministry of Economy, Trade and Industry
Ministry of Land, Infrastructure and Transport



■ Electronically controlled gasoline engine K25E



■ Three-way catalytic converter

TWO-LEVEL HIGH/LOW SPEED LIMITER

The Grendia's automatic speed limiter can be set to two levels – outdoors (HIGH) and indoors (LOW).



Drivers can alternate between the two speed limits at the flick of a switch, helping them to choose the most appropriate fuel efficiency for the location.

- Standard for Electronically Controlled Gasoline Engine Trucks

POWER/SOFT MODE SWITCH

Depending on the task, two power levels can be selected: POWER mode, which maximizes power output and SOFT mode for fuel efficiency and low noise levels. Selecting SOFT mode cuts CO₂ emissions by approximately 13% compared to the POWER mode.



- Standard for Electronically Controlled Gasoline Engine Trucks

2007 EMISSION STANDARDS COMPLIANT*: HIGH RELIABILITY DIESEL ENGINE

The well-known performance levels of the highly acclaimed Mitsubishi Diesel Engine have been maintained but now come with eco-friendly refinements. The upgraded engines have now achieved low emission levels in compliance with the 2007 Emission Standards without compromising horsepower or reliability.

- 2007 Emissions Standard for Specific Special Vehicles (including off-road vehicles) Compliant with Emissions Standard for Specific Special Vehicles
Ministry of the Environment
Ministry of Economy, Trade and Industry
Ministry of Land, Infrastructure and Transport



■ Swirl-chamber diesel engine S4S



LOW-NOISE DESIGN FOR MAXIMUM COMFORT WITH MINIMAL OPERATOR FATIGUE

With features such as low-noise engine, enhanced soundproofing of the engine compartment and floor level noise dampening, Mitsubishi Forklift Trucks has achieved a quiet working environment both for the operator and the surrounding working environment.

- ISO-equivalent noise level (When diesel engine is in SOFT mode at high idle speed)



OPTIONAL ECO-FRIENDLY VEHICLES WITH CLEAN EXHAUST EMISSIONS

Besides the gasoline-powered and diesel-powered models, the Grendia is also available in other clean exhaust, energy-efficient models. These include LPG-powered or diesel trucks fitted with DPF (Diesel Particulate Filter) that helps eliminate possible black smoke.

■ LPG powered version



Vehicle fitted with DPF helps eliminate black smoke.



The ceramic DPF filter recovery unit is fitted inside the right-side step of the machine.



DPF exhaust monitor. Displays filter levels and necessary recovery time.

“SAFETY FIRST”

– YET ANOTHER GRENDIA HALLMARK

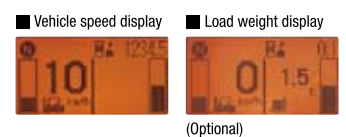
INTEGRATED PRESENCE SYSTEM – “IPS”



Grendia is fitted with Mitsubishi's IPS, an integrated active safety system designed to improve vehicle safety by actively detecting problems before they become accidents. It not only ensures safety during vehicle operation but also prevents errors when the operator is not seated, protecting both the operator and the workplace from potential accidents.

NEW INTEGRATED DIGITAL MONITORS

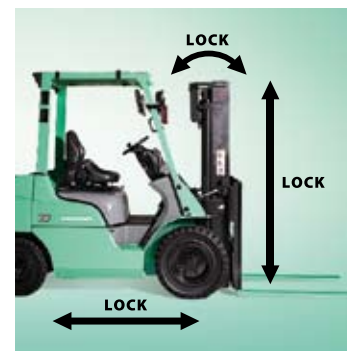
In the cab, digital displays are used to provide easier monitoring of systems and controls. The digital panel illuminates when the ignition is switched on allowing speed, load weight and system monitors to be checked at a glance.



MAST AND TRAVEL INTERLOCK

Mitsubishi Grendia forklift trucks are equipped with mast and travel interlock protection device that is linked to the operator's seat. If the operator is not seated, the mast and (for torque-converter models) the movement of the vehicle itself, is automatically locked in order to prevent injury or damage to property.

- Note that brakes are not applied in travel interlocking, so trucks can still move on slopes due to gravity.



LIFT LOCK

The fork on the Mitsubishi Grendia is automatically locked when the ignition is switched off, so it remains in position even if the lift lever is accidentally bumped or moved.



INNOVATIVE AND RELIABLE SAFETY FEATURES HELP PROTECT OPERATORS AND WORKPLACE

NEUTRAL SAFETY

A Neutral Safety device, which prevents the engine from starting unless the forward/backward lever is positioned at neutral, is now built in on all vehicles, including all torque-converter-fitted vehicles and all direct drive vehicles.

HIGH-MOUNTED REAR COMBINATION LAMP

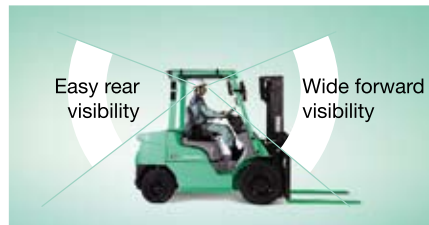
All Mitsubishi Grendias are installed with rear combination lamps above the head guard that clearly signals braking or stopping to vehicles or persons behind the forklift truck.



• Positions will differ for forklifts requiring vehicle inspections in Japan.

WIDE FORWARD VISIBILITY CLEAR REAR VISIBILITY

Unlike some forklift trucks, Mitsubishi Grendias have wide unobstructed visibility that extends from the tip of the fork to the top of the mast. Greater rear visibility is made possible by the Grendia's compact tail design.





POWERFUL, SMOOTH AND COMPACT. EXCELLENT PERFORMANCE FOR SPEEDY WORK.

POWERFUL LIFTING CAPACITY

Mitsubishi Grendias are constructed with a low center of gravity frame that optimizes vehicle balance and stability during lifting. That means a greater load capacity with much greater stability. The high-torque, high-power engine maintains a stable lift speed regardless of the load, helping operators to increase productivity.



EXCELLENT LIFTING ABILITY

Lift speed: **640mm/s** (when loaded)
660mm/s (when not loaded) • FGE25ZN
 No capacity deration up to a height of 4 meters (2-stage mast).

SOFT LANDINGS

Another exclusive feature found on the Mitsubishi Grendia is soft landing system that activates when the fork nears the ground, automatically protecting loads from hard drops or shocks.
 • Only for two-stage masts.

SMOOTH RUNNING

The high power engine and the high performance transmission are perfectly matched to produce an extremely smooth start/acceleration as well as excellent traction even on uphill slopes. Excellent braking and stopping control is provided by a robust and reliable duo-servo system.

SMOOTH ACCELERATION

10m acceleration **3.1 seconds** (unloaded)
 • FD25N



POWERFUL UPHILL ABILITY

12 degree uphill velocity **5.0km/h** (unloaded)
 • FD25N



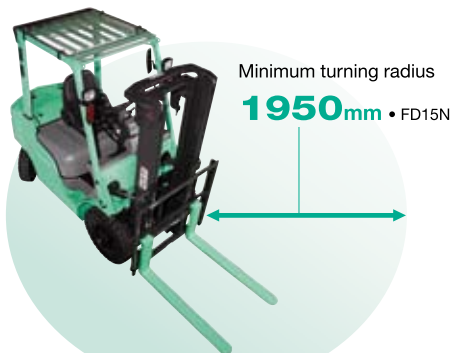
12°

COMPACT TURNING

Tight turns are easy with the Grendia, thanks to a fully hydraulic power steering fitted with steering synchronizer* for 100% stationary steering. Its maneuverability allows for easy U-turns and navigation in small workspaces.

* Steering synchronizer is optional on alternate sourced (MFD) Grendia trucks.

EXCELLENT STEERING ABILITY



GRENDIAS ARE EASY TO MANEUVER EVEN IN CRAMPED WAREHOUSES AND DELIVERY BAYS



EASY OPERATION. DRIVER COMFORT.



- 1 – **Suspension seat** with hip support mechanism.

Ability to adjust position and extent of reclining according to body shape for maximum comfort. Seat belt fitted with warning light. Soft-grip handle makes getting in and out easier.



- 2 – **Electric shift lever** can be moved back and forth at the touch of a finger. (for torque-converter models only)

- 3 – **Acrylic roof** (optional) for comfortable operation in outdoor conditions. Easily installed and uninstalled.



- 4 – **Tiltable steering column.**

- 5 – **Fully hydraulic power steering.**

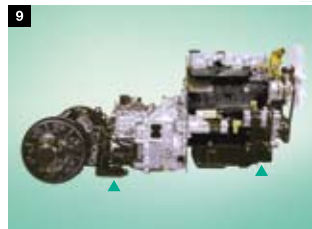
Fitted with steering synchronizer*, a mechanism that automatically matches the rear wheel angle to the steering angle.

- 6 – **Inching pedal** allows delicate movements.

- 7 – **Switches** for optional functions positioned on the right side of the dashboard.

- 8 – **Combination switch** integrating indicators and headlight switches.

- 9 – **Power-train full floating structure** for excellent vibration reduction. The entire power-train is supported by vibration absorbent rubber mounts.



OPTIONAL “FINGERTIP CONTROL MODEL **” – FOR EVEN SMOOTHER OPERATION

Grendias can be equipped with a fingertip controller to enable operations such as lifting and tilting at the touch of a finger.

- 1 Mast emergency stop button 3 Lift control lever 5 3V control lever
2 4V/5V switch 4 Tilt control lever

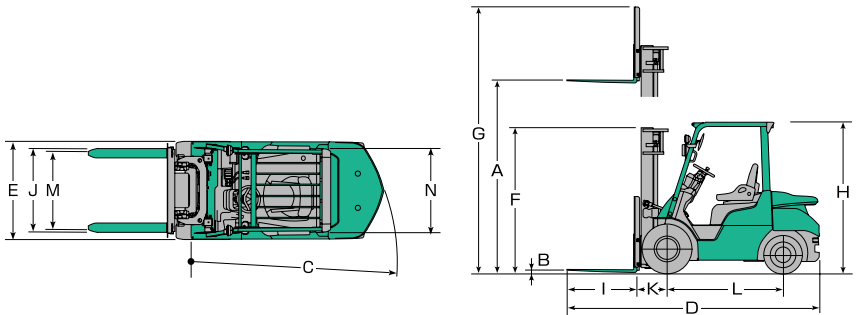
2 5 optional items

5 standard for certain regions



* Steering synchronizer is optional on alternate sourced (MFD) Grendia trucks.

** Fingertip control option is not available on alternate sourced (MFD) Grendia trucks.



Specifications

Type of Truck					DIESEL ENGINE TRUCK								GASOLINE ENGINE TRUCK										ELECTRONICALLY CONTROLLED GASOLINE ENGINE TRUCK																
Model					FD10N	FD15N	FD18N	FD20CN	FD20N	FD25N	FD30N	FD35AN	FG10N	FG15N	FG15ZN	FG18N	FG18ZN	FG20CN	FG20N	FG20ZN	FG25N	FG25ZN	FG30N	FG35AN	FGE15N	FGE18N	FGE20CN	FGE20N	FGE20ZN	FGE25N	FGE25ZN	FGE30N	FGE35AN						
Loading Capacity			kg		1000	1500	1750	2000	2500	3000	3500		1000	1500		1750		2000				2500		3000	3500	1500	1750	2000		2500		3000	3500						
Load Center			mm		500			500			500		500				500				500				500		500				5000								
PERFORMANCE																																							
Maximum Fork Height			mm	A	3000			3000			3000			3000				3000				3000				3000		3000				3000							
Free Fork Height			mm	B	115			120	140		145			115				120	140		145		145		115		120	140				145							
Speeds	Lifting	Loaded	mm/s		640	630		630			500		420		490		570		490		570		570	520	580	520	580	460	390		630		630	580	640	580	640	510	430
		Unloaded	mm/s	690			650	660		530	450		560		650	650	560	650	650	600	660	600	660	530	450		650	650	590	660	590	660	530	440					
	Lowering	Loaded	mm/s	520			520	500		530	420		520		520	500				530	420		520	500				520	520	590	660	500	530	420					
		Unloaded	mm/s	500			500			500	400		500		500				500	400		500	400		500	500				500	500		500	400					
Tilt	Mast	Forward	deg		6			6			6			6				6				6				6		6				6							
		Backward	deg	12			12			12			12				12				12				12		12				12								
Speeds	Traveling (Powershift)	Loaded	km/h		19			19			19			19				19				19				19		19				19							
		Unloaded	km/h	19.5			19.5			19.5			19.5				19.5				19.5				19.5		19.5				19.5								
	Traveling (Manual)	Loaded	km/h	19			19			19			19				19				19				19		19				19								
		Unloaded	km/h	19.5			19.5			19.5			19.5				19.5				19.5				19.5		19.5				19.5								
Maximum Drawbar Pull			kgf		1290	1260	1250	1210	1830	1810	1770	1680	1130	1110	1530	1090	1520	1480	1520	1750	1500	1730	1710	1630	1710		1670	1690	1860	1690	1870	1860	1750						
Maximum Gradeability	Manual	Loaded	kgf	1200	1180	1160	1130	1500	1480	1460	1380	990	960	1280	950	1270	1230	1280	1620	1250	1590	1590	1500	1390	1380	1360	1390	1630	1380	1620	1660	1560							
		Powershift	Loaded	%	44	33	29	25	36	31	25	21	38	29	41	25	36	31	30	35	25	30	24	20	48	42	36	34	38	29	33	27	22						
	Manual	Loaded	%	40	30	27	23	29	24	20	17	33	24	33	22	29	25	25	32	21	27	22	19	38	34	29	28	33	24	28	24	20							
Turning Radius			mm	C	1910	1950	1980	2020	2200	2230	2380	2440	1910	1950		1980		2020	2200		2230		2380	2440	1950	1980		2020	2200		2230		2380	2440					
Practical Intersecting Aisle Width			mm		2045	2065	2080	2105	2195	2215	2325	2365	2045	2065		2080		2105	2195		2215		2325	2365	2065	2080		2105	2195		2325		2365						
Practical Aisle for Right Angle Stacking			mm		3610	3650	3680	3735	3955	3985	4170	4230	3610	3650		3680		3735	3955		3985		4170	4230	3650	3680		3735	3955		3985		4170	4230					
DIMENSIONS																																							
Overall Length			mm	D	2980	3180	3220	3275	3405	3480	3805	3865	2980	3180		3220		3275	3405		3480		3805	3865	3180	3220	3275	3405		3480		3805	3865						
Width	with Standard Tires	mm	E	1065			1065	1150		1275		1290	1065		1065		1150		1275		1290		1065	1290	1065	1150		1065		1275		1290							
	with Optional Duals	mm		1330			—	1480		1490		1330		—		1480		1490		1330		—		1480	1330	—	1480		1490		1490	1490							
Height	with Lowered Mast	mm	F	1990			1990			2015		2130	1990				1990				2015				2130	1990	1990				2015				2130				
	with Extended Mast (with Backrest)	mm	G	4055			4055			4055		4055		4055				4055				4055				4055				4055				4055					
	to Top of Overhead Guard	mm <td>H</td> <td colspan="3">2065</td> <td>2065</td> <td colspan="2">2074</td> <td>2093</td> <td colspan="2">2103</td> <td colspan="2">2065</td> <td colspan="2">2074</td> <td>2093</td> <td colspan="2">2103</td> <td colspan="2">2065</td> <td colspan="2">2074</td> <td>2093</td> <td colspan="2">2103</td> <td>2065</td> <td colspan="2">2074</td> <td colspan="2">2093</td> <td>2103</td>	H	2065			2065	2074		2093	2103		2065		2074		2093	2103		2065		2074		2093	2103		2065	2074		2093		2103							
		mm <td>I</td> <td>35x100x770</td> <td colspan="3">35x100x920</td> <td colspan="3">40x122x920</td> <td colspan="2">50x125x1070</td> <td colspan="2">35x100x770</td> <td colspan="2">35x100x920</td> <td colspan="4">40x122x920</td> <td colspan="4">50x125x1070</td> <td colspan="4">35x100x920</td> <td colspan="4">40x122x920</td> <td colspan="2">50x125x1070</td>	I	35x100x770	35x100x920			40x122x920			50x125x1070		35x100x770		35x100x920		40x122x920				50x125x1070				35x100x920				40x122x920				50x125x1070						
Fork Spread (Out-to-Out Minimum / Maximum)			mm	J	200-920			244-920	244-1000		244-1000		200-920				220-920	220-1000		250-1000		200-920		244-920	244-1000		244-1000		244-1000		244-1000								
Front Overhang (Center of Front Axle to Fork Face)			mm	K	400			415	455		490		400				415	455		460		495		400	415	455	490		490		490								
Wheelbase			mm	L	1400			1400	1600		1700		1400				1400	1600		1700		1400		1400	1600		1700		1700		1700								
Tread Width	Front, standard tires	mm	M	890			890	960		1060		890		890	960		890	960		1060		890		890	960		1060		1060		1060								
	Front, optional duals	mm		1025			—	1140		1140		1025				—	1140		1140		1025		—	1140		1140		1140		1140									
	Rear tyres	mm	N	900			900	980		980		900				—	980		980		900		900	980		980		980		980									
Ground Clearance	at Lowest point mast	mm		110			110	115		135	150		110				110	115		135	150		110	110	115	115		135	150										
	at Center of Wheelbase	mm		150			150	160		190	200		150				150	160		190	200		150	150	160	160		190	200										
Tyre Size	Size Front, standard			6.50-10-10-PR			6.50-10/5.00	7.00-12-12PR		28x9-15-12PR	250-15-16PR		6.50-10-10-PR		7.00-12-12PR		28x9-15-12PR	250-15-16PR		6.50-10-10-PR		7.00-12-12PR		28x9-15-12PR	250-15-16PR		28x9-15-12PR		250-15-16PR										
	Size Front, optional dual			4.50-12-8-PR			—	5.50-15-8PR		6.00-15-10PR		4.50-12-8-PR		—		5.50-15-8PR		6.00-15-10PR		4.50-12-8-PR		—		5.50-15-8PR		6.00-15-10PR		6.00-15-10PR											
	Size Rear			5.00-8-8-PR			5.00-8/3.00	6.00-9-10PR		6.50-10-10PR	6.50-10-12PR		5.00-8-8-PR		5.00-8/3.00		6.00-9-10PR		6.50-10-10PR		6.50-10-12PR		5.00-8-8-PR		5.00-8 / 3.00		6.00-9-10PR		6.50-10-10PR	6.50-10-12PR									
WEIGHT																																							
Empty	Powershift (standard)	kg		2180	2550	2740	3060	3410	3710	4350	4740	2130	2490		2690		3010	3300	3600		4240	4630	2490	2690	3010	3300		3600		4240	4630								
	Manual (standard)	kg		2220	2590	2780	3100	3450	3750	4390	4780	2170	2530		2730		3050	3340	3640		4280	4670	2530	2730	3050	3340		3640		4280	4670								
	Powershift (optional dual)	kg		2220	2590	2780	—	3500	3800	4390	4770	2170	2530		2730		3050	3390	3690		4280	4660	2530	2730	—	3390		3690		4280	4660								
	Manual (optional dual)	kg		2260	2630	2820	—	3540	3840	4430	4810	2210	2570		2770		—	3430	3730		4320	4700	2570	2770	—	3430		3730		4320	4700								
BRAKE																																							
Service Brake					Hyd.			Hyd.			Hyd.			Hyd.				Hyd.				Hyd.				Hyd.				Hyd.									
Parking Brake					Hand			Hand			Hand			Hand				Hand				Hand				Hand													
POWERTRAIN																																							
Engine	Model			S4Q2			S4Q2	S4S		S4S		K15		K21	K15	K21	K21		K25	K21	K25	K25		K21E		K21E		K25E	K21E	K25E	K25E								
	Max. Rated Power / rpm to DIN 70020	Kw/rpm																																					