

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*



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FMIT0098-01

(04/09)

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:



GRENDA

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



GRENDIA'S ECO-POWER

MEETS THE ENVIRONMENTAL REQUIREMENTS OF TODAY AND TOMORROW.



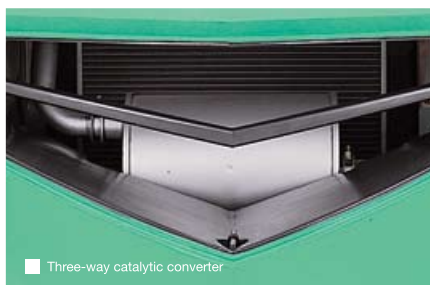
NEW 2007 EMISSION STANDARDS COMPLIANT*: **NEW ELECTRONICALLY CONTROLLED GASOLINE ENGINE**

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.



■ Vehicle speed display ■ Load weight display

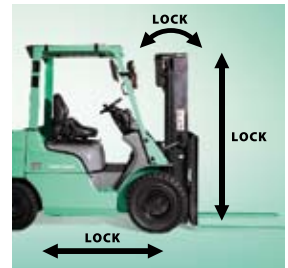


(Optional)

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.



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.

INNOVATIVE AND RELIABLE SAFETY FEATURES HELP PROTECT OPERATORS AND WORKPLACE

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.



OPTIONAL

HORIZONTAL DEPLOYMENT OF THE FORK AT THE FLICK OF A SWITCH – ALS*

Mast Vertical-Setting Mechanism

The mast can be automatically set vertically simply by pushing the tilt lever forward while pressing the switch, facilitating horizontal fork deployment.

* Automatic Levelling System





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

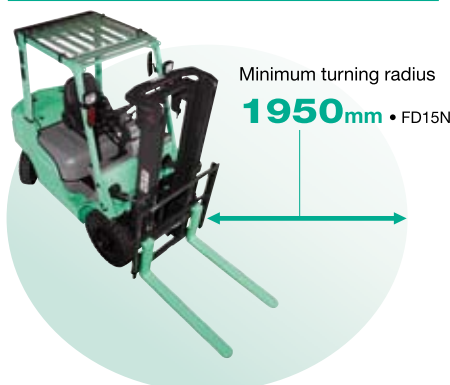
12 degree uphill velocity **5.0km/h** (unloaded)
• FD25N



COMPACT TURNING

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

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 – **Tilttable steering column.**

5 – **Fully hydraulic power steering.**

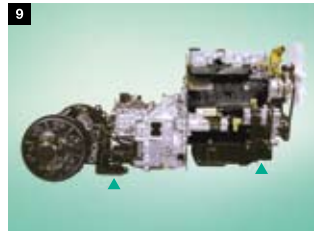
Fitted with steering synchronizer, a mechanism that automatically matches the rear wheel angle to the steering angle.

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.

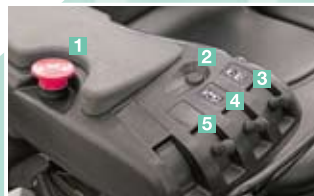
9 – **Power-train full floating structure** for excellent vibration reduction. The entire power-train is supported by vibration absorbent rubber mounts.



OPTIONAL “FINGERTIP CONTROL MODEL” – FOR EVEN SMOOTHER OPERATION

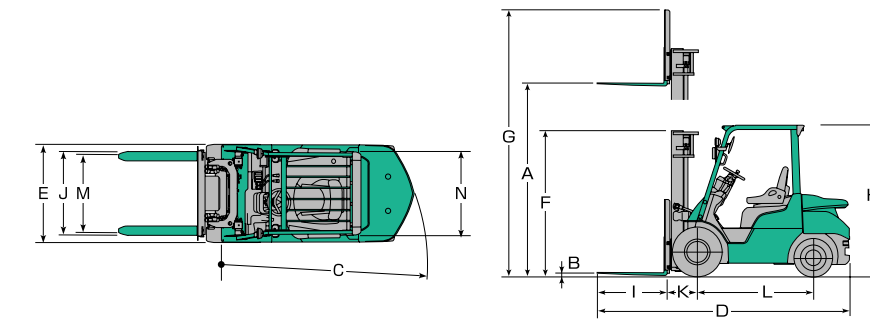
Grendias can be equipped with a fingertip controller to enable operations such as lifting and tilting at the touch of a finger.

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



Specifications

CHARACTERISTICS																																
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														kg								kg								
Load Center		mm														mm								mm								
Maximum Fork Height		3000														3000								3000								
Free Fork Height		115														145								145								
Speeds	Lifting	Loaded	640	630	630	630	630	500	420	490	570	490	570	570	520	580	520	580	460	390	630	630	580	640	580	640	510	430				
		Unloaded	690	650	660	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	520	520	500	520	500	530	420	520	520	500	520	500	500	500	500	500	500	420	520	520	520	500	500	500	500	420	420			
		Unloaded	500	500	500	500	500	500	400	500	500	500	500	500	500	500	500	500	500	400	500	500	500	500	500	500	500	400	400			
Tilt	Mast	Forward	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6			
		Backward	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12			
Speeds	Traveling (Powershift)	Loaded	19	19.5	19.5	19.5	19.5	19	19	19	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19	19	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5			
		Unloaded	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
	Traveling (Manual)	Loaded	19	19.5	19.5	19.5	19.5	19	19	19	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19	19	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5		
		Unloaded	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5		
Maximum Drawbar Pull	Powershift	Loaded	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		
	Manual	Loaded	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	
Maximum Gradeability	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														mm								mm								
Practical Intersecting Aisle Width		mm														mm								mm								
Practical Aisle for Right Angle Stacking		mm														mm								mm								
DIMENSIONS																																
Overall Length		mm														mm								mm								
Width	with Standard Tires	mm														mm								mm								
	with Optional Duals	mm														mm								mm								
Height	with Lowered Mast	mm														mm								mm								
	with Extended Mast (with Backrest)	mm														mm								mm								
Forks (Thickness x Width x Length)	to Top of Overhead Guard	mm														mm								mm								
	to Top of Overhead Guard	mm														mm								mm								
Fork Spread (Out-to-Out Minimum / Maximum)		mm														mm								mm								
Front Overhang (Center of Front Axle to Fork Face)		mm														mm								mm								
Wheelbase		mm														mm								mm								
Tread Width	Front, standard tires	mm														mm								mm								
	Front, optional duals	mm														mm								mm								
	Rear tyres	mm														mm								mm								
Ground Clearance	at Lowest point mast	mm														mm								mm								
	at Center of Wheelbase	mm														mm								mm								
Tyre Size	Size Front, standard	mm														mm								mm								
	Size Front, optional dual	mm														mm								mm								
	Size Rear	mm														mm								mm								
WEIGHT																																
Empty	Powershift (standard)	kg														kg								kg								
	Manual (standard)	kg														kg								kg								
	Powershift (optional dual)	kg														kg								kg								
	Manual (optional dual)	kg														kg								kg								
BRAKE																																
Service Brake		Hyd.														Hyd.								Hyd.								
Parking Brake		Hand														Hand								Hand								
POWERTRAIN																																
Engine	Model	S4Q2														S4S								K15								
	Max. Rated Power / rpm to DIN 70020	Kw/rpm	30 / 2500														38.1 / 2250								26 / 2450							
		ps/rpm	40.8 / 2500														49.1 / 2250								35.4 / 2450							
	Max. Rated Torque / rpm to DIN 70020	Nm/rpm	131 / 1800														185 / 1700								109 / 2000							
		kgm/rpm	13.4 / 1800														18.9 / 1700								11.1 / 2000							
Displacement		cc														3331								1486								
Fuel Tank Capacity		l														66								66								
Transmission		Type														Powershift / Manual								Powershift / Manual								
Relief Pressure		Number of Speeds														AT:1 / MT:2								AT:1 / MT:2								
		For Attachments														18.1								18.1								