

autovictor

 *Keep on moving to the future.*

CARRELLI ELEVATORI

MITSUBISHI
FD25N



GRENDiA ES

FG15 - 35(C)N / FD20-35N3 Series

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

| | |
|--------|--------|
| FG15N | |
| FG18N | |
| FG20CN | |
| FG20N | FD20N3 |
| FG25N | FD25N3 |
| FG30N | FD30N3 |
| FG35N | FD35N3 |



**WHEN
RELIABILITY IS
EVERYTHING...**

GRENDIA ES

FG15 - 35(C)N / FD20-35N3 Series

DIESEL AND LPG COUNTERBALANCE TRUCKS

1.5 – 3.5 tonnes



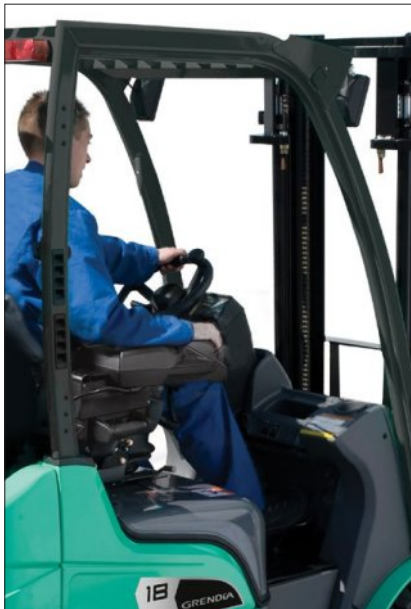
With its exceptional fuel economy, durable components and low-maintenance design, GRENDIA makes perfect business sense. What's more, it comes with a package of advanced features, fitted as standard, that offers true value for money.

Fast, stable and exceptionally powerful, GRENDIA forklift trucks offer a potent combination of high efficiency and low emissions in line with Euro Stage V regulations.

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 common rail diesel technology**, diesel particulate filters (DPF) and diesel oxidation catalysts (DOC) ensure clean and efficient fuel consumption, as well as low noise.
- **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 on diesel models – 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

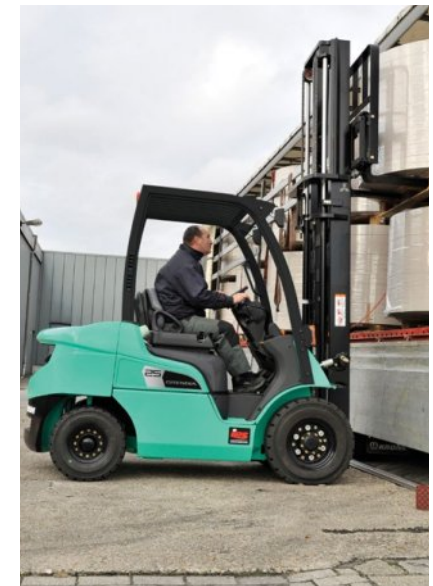
- **Fully hydrostatic drum brakes** give excellent control with little effort and are easy to maintain.

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.
- **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 ES on mitforklift.com

For more extensive information please visit our website mitforklift.com



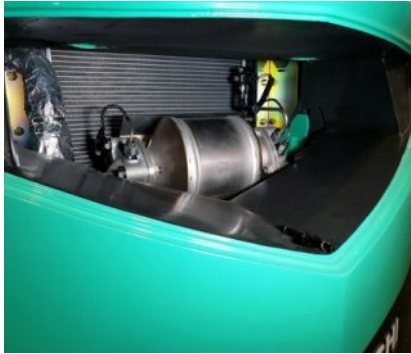
mft2.eu/grendiaesd

GRENDIA ES

FG15 - 35(C)N / FD20-35N3 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 Grammer 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:



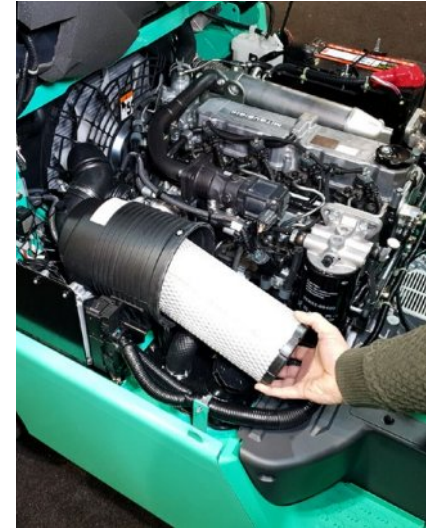
- a hydraulic and travel interlock system that prevents all movement of the truck and its mast if the driver is not seated
- a seat belt warning light
- a parking brake alarm

- **Clear, informative meter panel** includes essential warning lights and LCD display with speedometer, soot level indicator, clock and dual hour meter.

- **Delux 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.



There is more information on GRENDA ES on mitforklift.com

For more extensive information please visit our website mitforklift.com



VDI - PERFORMANCE & DIMENSIONS

| CHARACTERISTICS | | | | Mitsubishi Forklift Trucks | Mitsubishi Forklift Trucks | Mitsubishi Forklift Trucks | Mitsubishi Forklift Trucks |
|---------------------|--|-----------|-----------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1.1 | Manufacturer | | | FD20N3 | FD25N3 | FD30N3 | FD35N3 |
| 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 | 3460 | 3760 | 4430 | 4820 |
| 2.2 | Axle loading with maximum load, front / rear (simple x mast, lowest lift height) | | kg | 4670 / 790 | 5460 / 800 | 6530 / 900 | 7240 / 1080 |
| 2.3 | Axle loading without load, front / rear (simple x mast, lowest lift height) | | kg | 1470 / 1990 | 1460 / 2300 | 1780 / 2650 | 1700 / 3120 |
| WHEELS, DRIVE TRAIN | | | | | | | |
| 3.1 | Tyres: V=solid, L=pneumatic, SE=solid pneumatic - front / rear | | | SE / SE | SE / SE | SE / SE | SE / SE |
| 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) | h2 | mm | 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 | 4355 | 4360 | 4330 | 4360 |
| 4.7 | Height to top of overhead guard | h6 | mm | 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 | | | | |
| 4.34b | Working aisle width with 800 x 1200 mm pallets, lengthwise | Ast | mm | 3655 | 3690 | 3875 | 3935 |
| 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 | 16.5 / 17.5 | 16.0 / 17.5 | 16.0/17.0 | 16.5 / 18.0 |
| 5.2 | Lifting speed, with / without load | | m/s | 0.61 / 0.64 | 0.61 / 0.64 | 0.49 / 0.51 | 0.41 / 0.43 |
| 5.3 | Lowering speed, with / without load | | m/s | 0.50 / 0.50 | 0.50 / 0.50 | 0.50 / 0.50 | 0.50 / 0.50 |
| 5.5 | Rated drawbar pull, with / without load | | N | 16200 / 15900 | 16100 / 15800 | 15800 / 15800 | 14800 / 15000 |
| 5.6 | Maximum drawbar pull, with / without load (5 min short duty) | | N | -/- | -/- | -/- | -/- |
| 5.7 | Gradeability, with / without load | | % | 31 / 52 | 27 / 47 | 22 / 39 | 18 / 33 |
| 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 | | | D04EG | D04EG | D04EG | D04EG |
| 7.2 | Rated output to ISO 1585 (Gross output) | | kW | 36.0 | 36.0 | 36.0 | 36.0 |
| 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 |
| 7.6a | Max torque | | Nm | 177 | 177 | 177 | 177 |
| 7.7a | Max torque at engine speed | | rpm | 1800 | 1800 | 1800 | 1800 |
| 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 | 90 | 90 | 90 | 90 |
| 10.2 | Oil flow for attachments | | l/min | 75 | 75 | 73 | 73 |
| 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

FD20 - 35N3 Series

**DIESEL
COUNTERBALANCE**

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 | | | SE / SE | SE / SE | 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) | h2 | mm | 115 | 115 | 115 |
| 4.4 | Lift height (see tables) | h3 | mm | 3300 | 3300 | 3300 |
| 4.5 | Overall height with mast raised | h4 | mm | 4355 | 4355 | 4355 |
| 4.7 | Height to top of overhead guard | h6 | mm | 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 | | | |
| 4.34b | Working aisle width with 800 x 1200 mm pallets, lengthwise | Ast | mm | 3350 | 3380 | 3435 |
| 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 | | | GK21E | GK21E | 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 | | cm³ | 4 / 2065 | 4 / 2065 | 4 / 2065 |
| 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 | 74 | 74 | 74 |
| 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

FG15 - 20CN Series

**LPG
COUNTERBALANCE**

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 | | | SE / SE | SE / SE | SE / SE | SE / SE |
| 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) | h2 | mm | 140 | 140 | 145 | 145 |
| 4.4 | Lift height (see tables) | h3 | mm | 3300 | 3300 | 3300 | 3300 |
| 4.5 | Overall height with mast raised | h4 | mm | 4355 | 4355 | 4355 | 4355 |
| 4.7 | Height to top of overhead guard | h6 | mm | 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 | | | | |
| 4.34b | Working aisle width with 800 x 1200 mm pallets, lengthwise | Ast | mm | 3655 | 3690 | 3875 | 3935 |
| 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 | 16.5 / 18.0 |
| 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 | | | GK21E | GK21E | GK25E | 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 |
| 7.6a | 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 | 83 | 83 | 90 | 90 |
| 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

FG20 - 35N Series

**LPG
COUNTERBALANCE**

2.0 – 3.5 tonnes



MAST PERFORMANCE AND CAPACITY

GRENDIA ES

FG15-20(C)N

| MAST TYPE | FG15N-18N - 20CN | | | FG15N | | FG18N | | 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 1750 | - 940 2000 | - 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(3)

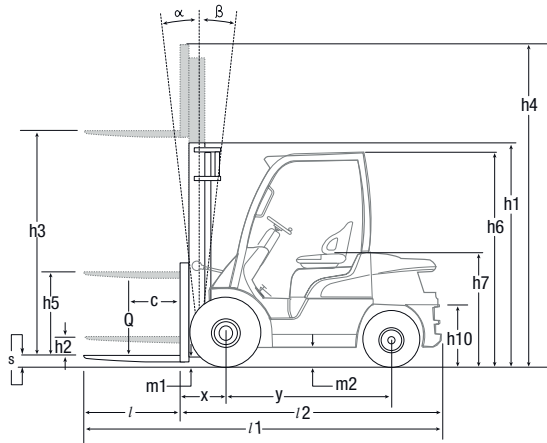
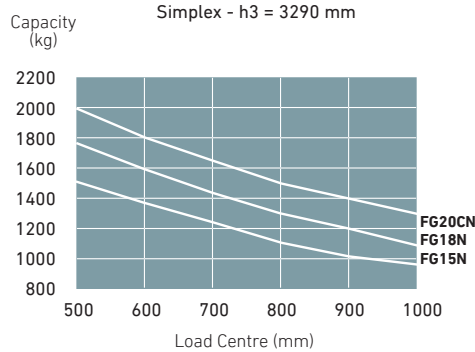
| MAST TYPE | FG20 - 25N FD20 - 25N3 | | | FG20N FD20N3 | | FG25N FD25N3 | |
|-----------|---------------------------|-------|--------------|-----------------|---------------|-----------------|---------------|
| | h3 mm | h1 mm | h4 mm | h2 / h5 mm | Q@ c=500mm kg | h2 / h5 mm | Q@ c=500mm kg |
| SIMPLEX | 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 390 mm (20-25N(3)), 350 mm (30N(3)), 240 mm (35N(3)), while h4 will decrease by 390 mm (20-25N(3)), 350 mm (30N(3)), 240 mm (35N(3)).
 The capacities apply to pneumatic shaped solid tyres (SE).

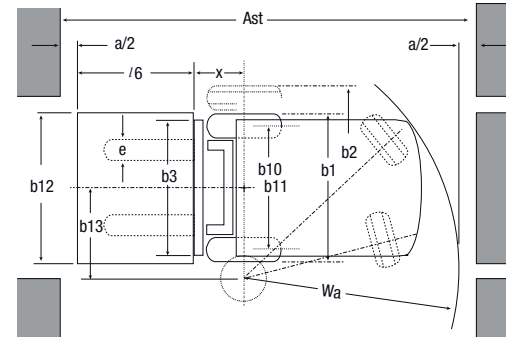
FD/FG30-35N(3)

| MAST TYPE | FG30N FD30N3 | | | | FG35N FD35N3 | | | | | | | |
|-----------|-----------------|-------|-------------|-------------|-----------------|-------|-------------|-------------|------------|---------------|-------------|-------------|
| | 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 | 4055 | 95 - 3500 |
| | 3300 | 2165 | 4355 | 95 - 3000 | 3300 | 2280 | 4355 | 95 - 3500 | 3300 | 2280 | 4355 | 95 - 3500 |
| | 3500 | 2265 | 4555 | 95 - 3000 | 3500 | 2380 | 4555 | 95 - 3500 | 3500 | 2380 | 4555 | 95 - 3500 |
| | 3700 | 2365 | 4755 | 95 - 3000 | 3700 | 2480 | 4755 | 95 - 3500 | 3700 | 2480 | 4755 | 95 - 3500 |
| | 4000 | 2565 | 5055 | 95 - 3000 | 4000 | 2680 | 5055 | 95 - 3500 | 4000 | 2680 | 5055 | 95 - 3500 |
| | 4500 | 2815 | 5555 | 95 - 2900 | 4500 | 2930 | 5555 | 95 - 3500 | 4500 | 2930 | 5555 | 95 - 3500 |
| | 5000 | 3115 | 6055 | 95 - 2900 | 5000 | 3230 | 6055 | 95 - 3500 | 5000 | 3230 | 6055 | 95 - 3500 |
| | 5500 | 3365 | 6555 | 95 - 2800 | 5500 | 3480 | 6555 | 95 - 3350 | 5500 | 3480 | 6555 | 95 - 3350 |
| 6000 | 3615 | 7055 | 95 - 2700 | 6000 | 3730 | 7055 | 95 - 3250 | 6000 | 3730 | 7055 | 95 - 3250 | |
| DUPLEX | 3000 | 2045 | 4055 | - 940 3000 | 3010 | 2180 | 4065 | - 1125 3500 | 3010 | 2180 | 4065 | - 1125 3500 |
| | 3250 | 2165 | 4305 | - 1090 3000 | 3300 | 2300 | 4355 | - 1245 3500 | 3300 | 2300 | 4355 | - 1245 3500 |
| | 3490 | 2285 | 4545 | - 1210 3000 | 3500 | 2445 | 4555 | - 1390 3500 | 3500 | 2445 | 4555 | - 1390 3500 |
| | 4010 | 2610 | 5065 | - 1535 3000 | 4000 | 2765 | 5055 | - 1710 3500 | 4000 | 2765 | 5055 | - 1710 3500 |
| TRIPLEX | 3700 | 1815 | 4755 | - 760 3000 | 3700 | 1930 | 4755 | - 875 3500 | 3700 | 1930 | 4755 | - 875 3500 |
| | 4000 | 1915 | 5055 | - 860 3000 | 4000 | 2030 | 5055 | - 975 3500 | 4000 | 2030 | 5055 | - 975 3500 |
| | 4300 | 2015 | 5355 | - 960 3000 | 4300 | 2130 | 5355 | - 1075 3500 | 4300 | 2130 | 5355 | - 1075 3500 |
| | 4700 | 2165 | 5755 | - 1110 3000 | 4700 | 2280 | 5755 | - 1225 3500 | 4700 | 2280 | 5755 | - 1225 3500 |
| | 5000 | 2265 | 6055 | - 1210 2900 | 5000 | 2380 | 6055 | - 1325 3450 | 5000 | 2380 | 6055 | - 1325 3450 |
| | 5500 | 2435 | 6555 | - 1380 2800 | 5500 | 2550 | 6555 | - 1495 3300 | 5500 | 2550 | 6555 | - 1495 3300 |
| | 6000 | 2605 | 7055 | - 1550 2700 | 6000 | 2720 | 7055 | - 1665 3200 | 6000 | 2720 | 7055 | - 1665 3200 |
| | 6500 | 2815 | 7555 | - 1760 2350 | 6500 | 2930 | 7555 | - 1875 2350 | 6500 | 2930 | 7555 | - 1875 2350 |
| 7000 | 3115 | 8055 | - 2060 1600 | 7000 | 3230 | 8055 | - 2175 1600 | 7000 | 3230 | 8055 | - 2175 1600 | |

FG15-20(C)N Models Capacities at various load centres

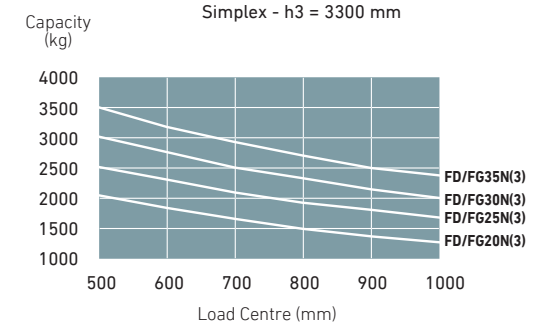


- h1 Height with mast lowered
- h2 Standard free lift
- h3 Lift height
- h4 Height with mast raised
- h5 Full free lift
- Q Lifting capacity, rated load
- c Load centre (distance)



- 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(3) Models Capacities at various load centres



STANDARD EQUIPMENT & OPTIONS

● = Standard
● = Option

| | FD20-25N3 | FD30-35N3 | 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) | ● | ● | ● | ● | ● | ● |

Contact your dealer for additional standard and optional equipment.

GRENDIA ES

FG15-35(C)N / FD20 - 35N3 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

| | FD20-25N3 | FD30-35N3 | 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 (not available with Delux Cabin) | ● | ● | ● | ● | ● | ● |
| Convenience tray | ● | ● | ● | ● | ● | ● |
| Delux 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 | ● | ● | ● | ● | ● | ● |

Contact your dealer for additional standard and optional equipment.

GRENDIA ES
FG15-35(C)N / FD20 - 35N3
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



Delux Cabin

autovictor

 *Keep on moving to the future.*

MITSUBISHI FD25N



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