



# TECHNICAL SPECIFICATIONS

Pneumatic Diesel Forklift Trucks

D110/130/160S-5

11,000kg to 16,000kg Capacity

**PRO5**  
SERIES



# 11,000/13,000/16,000 kg Capacities

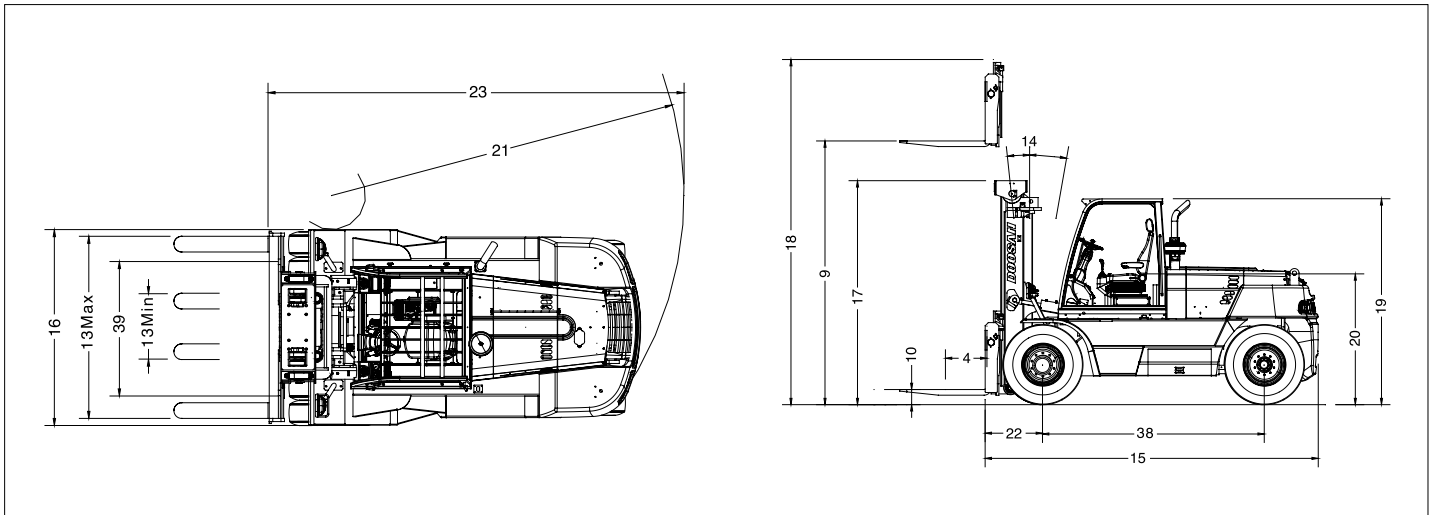
Engine Powered Forklift Trucks  
Pneumatic Tire, Diesel

## MAIN VEHICLE SPECIFICATIONS

| CHARACTERISTICS | 2   | Model                           |                                | D110S-5          |                   | D130S-5          |                   | D160S-5          |                   |                |
|-----------------|---|---------------------------------|--------------------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|----------------|
|                 | 3   | Load Capacity                   | at rated load centre           | kg               | 11,000            |                  | 13,000            |                  | 16,000            |                |
|                 | 4   | Load Centre                     |                                | mm               | 600               |                  | 600               |                  | 600               |                |
|                 | 5   | Power Type                      | Elec, Diesel, LPG, Gasoline    |                  | Diesel            |                  | Diesel            |                  | Diesel            |                |
|                 | 6   | Operator Type                   |                                |                  | driver seated     |                  | driver seated     |                  | driver seated     |                |
|                 | 7   | Tire Type                       | P: Pnu, E: Solid Soft, C: Cush |                  | P                 |                  | P                 |                  | P                 |                |
|                 | 8   | Wheels (x=Driven)               | Front / Rear                   |                  | 2 x 2 / 2         |                  | 2 x 2 / 2         |                  | 2 x 2 / 2         |                |
|                 | 9   | Max. Fork Height                | with STD 2-stage mast          | mm               | 3,000             |                  | 3,000             |                  | 3,000             |                |
| 10              | Free Lift   |                                 | mm                             | 0                |                   | 0                |                   | 0                |                   |                |
| 12              | Fork Carriage   | ISO Class                       |                                | -                |                   | -                |                   | -                |                   |                |
| DIMENSIONS      | 13  | Forks                           | Length x Width x Thickness     | mm               | 1,350 x 200 x 70  |                  | 1,350 x 200 x 85  |                  | 1,350 x 200 x 85  |                |
|                 |   |                                 | Fork Spacing(Min x Max)        | mm               | 470 x 2,140       |                  | 470 x 2,140       |                  | 470 x 2,290       |                |
|                 | 14  | Tilt of Mast                    | Forward/Backward               | deg              | 15 / 12           |                  | 15 / 12           |                  | 15 / 12           |                |
|                 | 15  | Overall Dimensions              | Length to Fork Face            | mm               | 4,340             |                  | 4,340             |                  | 4,715             |                |
|                 |   |                                 | Overall Width                  | mm               | 2,350             |                  | 2,350             |                  | 2,490             |                |
|                 |   |                                 | Mast Lowered Height            | mm               | 2,970             |                  | 2,970             |                  | 3,170             |                |
|                 |   |                                 | Mast Extended Height           | mm               | 4,470             |                  | 4,470             |                  | 4,670             |                |
|                 |   |                                 | Overhead Guard Height          | mm               | 2,765             |                  | 2,765             |                  | 2,928             |                |
|                 | 19  |                                 | Seat Height                    | mm               | 1,660             |                  | 1,660             |                  | 1,820             |                |
|                 | 21  | Turning Radius                  | Minimum outside                | mm               | 4,040             |                  | 4,040             |                  | 4,400             |                |
| 22              | Load Moment Centre                                    |                                 | mm                             | 755              |                   | 760              |                   | 815              |                   |                |
| 23              | Aisle 90 degree stacking(add load length & clearance) |                                 | mm                             | 4,790            |                   | 4,790            |                   | 5,195            |                   |                |
| PERFORMANCE     | 24  | Travel Speed                    | Loaded/Unloaded                | km/h             | 33.0 / 36.0       |                  | 33.0 / 36.0       |                  | 29.0 / 33.0       |                |
|                 | 25  | Lifting Speed                   | Loaded/Unloaded                | mm/s             | 450 / 490         |                  | 430 / 490         |                  | 410 / 450         |                |
|                 | 26  | Lowering Speed                  | Loaded/Unloaded                | mm/s             | 480 / 430         |                  | 480/430           |                  | 430 / 410         |                |
|                 | 28  | Max. drawbar pull               | Loaded at 1.0 mph(1.6 km/h)    | kg               | 8,080             |                  | 8,080             |                  | 10,400            |                |
|                 | 30  | Max. gradeability               | Loaded at 1.0 mph(1.6 km/h)    | %                | 33                |                  | 29.5              |                  | 28.5              |                |
|                 | 32  | Total Service Weight , Unloaded |                                | kg               | 15,540            | 15,540           | 16,800            | 16,800           | 18,900            | 18,900         |
| 33              | Axle Load   | Loaded, Front / Rear            | kg                             | 23,340 / 3,200   |                   | 26,500 / 3,300   |                   | 31,870 / 3,030   |                   |                |
|                 |   | Unloaded, Front / Rear          | kg                             | 7,110/8,430      |                   | 7,300 / 9,500    |                   | 8,680 / 10,220   |                   |                |
| CHASSIS         | 34  |                                 |                                | kg               | 7,110/8,430       | 7,110 / 8,430    | 7,300 / 9,500     | 7,300 / 9,500    | 8,680 / 10,220    | 8,680 / 10,220 |
|                 | 35  |                                 | Number of wheels (F/R)         |                  | 4 / 2             |                  | 4 / 2             |                  | 4 / 2             |                |
|                 | 36  | Tyres                           | Size , Front                   |                  | 10.00 x 20 - 16PR |                  | 10.00 x 20 - 16PR |                  | 12.00 x 20 - 18PR |                |
|                 |   |                                 | Size , Rear                    |                  | 10.00 x 20 - 16PR |                  | 10.00 x 20 - 16PR |                  | 12.00 x 20 - 18PR |                |
|                 | 38  | Wheel Base                      | Distance                       | mm               | 2,850             |                  | 2,850             |                  | 3,150             |                |
|                 | 39  | Tread Width                     | Front / Rear                   | mm               | 1,724 / 1,860     |                  | 1,724 / 1,860     |                  | 1,825 / 1,910     |                |
| 40              | Ground Clearance                                      | Loaded at the lowest point      | mm                             | 270              |                   | 270              |                   | 270              |                   |                |
|                 |   | Loaded at centre of wheelbase   | mm                             | 360              |                   | 360              |                   | 370              |                   |                |
| 42              | Brakes  | Service                         |                                | Foot / Air       |                   | Foot / Air       |                   | Foot / Air       |                   |                |
| 43              |   | Parking                         |                                | Hand / Air       |                   | Hand / Air       |                   | Hand / Air       |                   |                |
| 45              | Battery   | Voltage / Ampere                | V/AH                           | 24(12 x 2) / 100 |                   | 24(12 x 2) / 100 |                   | 24(12 x 2) / 100 |                   |                |
| POWER TRAIN     | 49  | Manufacturer                    |                                | Doosan           |                   | Doosan           |                   | Doosan           |                   |                |
|                 | 50  | Engine                          | Model                          |                  | DL06              | DE08TS           | DL06              | DE08TS           | DL06              | DE08TS         |
|                 |   |                                 | Rated Power (DIN)              | HP(PS)/rpm       | 140 / 2,100       | 140 / 2,200      | 140 / 2,100       | 140 / 2,200      | 160 / 2,100       | 160 / 2,200    |
|                 |   |                                 |                                | kW/rpm           | 103 / 2,100       | 103 / 2,200      | 103 / 2,100       | 103 / 2,200      | 117.8 / 2,100     | 118 / 2,200    |
|                 | 51  |                                 | Maximum Torque                 | kgm/rpm          | 59 / 1,400        | 55 / 1,400       | 59 / 1,400        | 55 / 1,400       | 67 / 1,400        | 63 / 1,400     |
| 52              |   | Cylinders/ Displacements        | CC                             | 6 / 5,890        | 6 / 8,071         | 6 / 5,890        | 6 / 8,071         | 6 / 5,890        | 6 / 8,071         |                |
| 55              |   | Type                            |                                | Full Autoshift   |                   | Full Autoshift   |                   | Full Autoshift   |                   |                |
|                 |   | Number of Speed (Fwd/Rev)       |                                | 3 / 3            |                   | 3 / 3            |                   | 3 / 3            |                   |                |
| 57              | Hydraulic Pressure                                    | System                          | bar                            | 190              |                   | 190              |                   | 210              |                   |                |
|                 |   | Attachment                      | bar                            | 140              |                   | 140              |                   | 140              |                   |                |

Note: Specification values quoted in this specification sheet has been rounded. Performance may vary due to operation conditions.  
Products and specifications are subject to improvement and change without prior notices.

## DIMENSIONAL DRAWING



## MAST SPECIFICATIONS and RATED CAPACITIES

| Model   | Mast Type | Maximum Fork Height | Fully Lowered Height | Fully Extended Height | Free Lift | Rated Load Capacities |                    |            |         |          |
|---------|-----------|---------------------|----------------------|-----------------------|-----------|-----------------------|--------------------|------------|---------|----------|
|         |           |                     |                      |                       |           | With Load Backrest    | With Load Backrest | Tilt Angle |         | LC 600mm |
|         |           |                     |                      |                       |           |                       |                    | FWD deg    | BWD deg |          |
| D110S-5 | STD       | 3000                | 2965                 | 4465                  | 0         | 15                    | 12                 | 11000      |         |          |
|         |           | 3500                | 3215                 | 4965                  | 0         | 15                    | 12                 | 11000      |         |          |
|         |           | 4000                | 3465                 | 5465                  | 0         | 15                    | 12                 | 11000      |         |          |
|         |           | 4500                | 3715                 | 5965                  | 0         | 15                    | 12                 | 11000      |         |          |
|         |           | 5000                | 4165                 | 6665                  | 0         | 15                    | 12                 | 11000      |         |          |
|         |           | 5500                | 4415                 | 7165                  | 0         | 15                    | 12                 | 10500      |         |          |
|         |           | 6000                | 4665                 | 7665                  | 0         | 15                    | 12                 | 9500       |         |          |
| D130S-5 | STD       | 3000                | 2965                 | 4465                  | 0         | 15                    | 12                 | 13000      |         |          |
|         |           | 3500                | 3215                 | 4965                  | 0         | 15                    | 12                 | 13000      |         |          |
|         |           | 4000                | 3465                 | 5465                  | 0         | 15                    | 12                 | 13000      |         |          |
|         |           | 4500                | 3715                 | 5965                  | 0         | 15                    | 12                 | 13000      |         |          |
|         |           | 5000                | 4165                 | 6665                  | 0         | 15                    | 12                 | 13000      |         |          |
|         |           | 5500                | 4415                 | 7165                  | 0         | 15                    | 12                 | 12000      |         |          |
|         |           | 6000                | 4665                 | 7665                  | 0         | 15                    | 12                 | 11000      |         |          |
| D160S-5 | STD       | 2900                | 2950                 | 4400                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 3000                | 3170                 | 4670                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 3500                | 3420                 | 5170                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 4000                | 3670                 | 5670                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 4500                | 3920                 | 6170                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 5000                | 4370                 | 6870                  | 0         | 15                    | 12                 | 16000      |         |          |
|         |           | 5500                | 4620                 | 7370                  | 0         | 15                    | 12                 | 15000      |         |          |
|         | 6000      | 4870                | 7870                 | 0                     | 15        | 12                    | 14000              |            |         |          |
|         | FFT       | 3700                | 2930                 | 5335                  | 1380      | 15                    | 10                 | 15000      |         |          |
|         |           | 4000                | 3030                 | 5635                  | 1480      | 15                    | 10                 | 15000      |         |          |
|         |           | 4500                | 3195                 | 6130                  | 1645      | 15                    | 10                 | 15000      |         |          |
|         |           | 5000                | 3360                 | 6635                  | 1815      | 15                    | 10                 | 15000      |         |          |
|         |           | 5500                | 3530                 | 7135                  | 1980      | 15                    | 10                 | 14400      |         |          |
|         |           | 6000                | 3695                 | 7630                  | 2145      | 15                    | 10                 | 13400      |         |          |

Note: Mast specifications & Rated Capacities are based on standard chassis with pneumatic tire and without sideshifter.

## TECHNICAL INFORMATION

### ● Standard Equipment

- Chassis with Doosan Turbo-charger
- DL06 : 5.9 Liter
- DE08TS : 8.1 Liter
- 3 Speeds full autoshift transmission and inching system
- Fully hydraulic power steering with load sensing
- Integrated Instrument Panel
- Fully air actuated parking brake and service brake
- Deluxe suspension seat with retractable seat belt
- 2 front and rear flood lights and combination lamps
- Reinforced anisometric overhead guard rail for cabin
- Pilot operated lift/ tilt locking 2 spool hydraulic Valve
- High visibility 2 stage 3000 mm(118 in) Mast
- Dual element air cleaner
- 15°Forward / 12°Backward tilt cylinders.
- 1350 mm (53 in) length forks

### ● Mast

Doosan forklift trucks offer a full range of wide view masts;

- STD double mast : 3.0m(118 in) ~ 6.0m(236 in)
- FFT triple full free mast : 3.7m(145 in) ~ 6.0m(246 in) ;  
Suitable for stacking applications in areas with limited height clearance but where maximum lift is also required.  
( Available on D160S-5 only)

All masts are steel weldment uprights with rigid cross members for strength and reliability. Secondary lift cylinders have cushioning valves to ensure smooth and silent staging during lifting and lowering.

### ● Carriage

D110/130/160S-5 series is equipped with high tensile shaft mounting type carriage. An optional integrated sidershifter and fork mover is also available.

### ● Engine

#### Full Range Electric Governed Turbocharger Doosan DL06 5.9 liter Diesel Engine

The powerful and reliable 6 cylinder Doosan DL06 5.9 liter diesel engine provides excellent performance for even the toughest applications. Doosan DL06 diesel engine complies with EPA Tier III and Euro Stage 3 emission regulation. High fuel injection system pressure, 4 valves per cylinder and CAC(Charged Air Cooler) turbocharger maximizes engine performance with low fuel consumption rates. The ECU(Engine Control Unit) controls basic engine output functions, such as proper and optimum AFR(Air to Fuel Ratio), engine torque and speeds.

The ECU also protects the engine from abnormal engine conditions, such as 'High Engine Coolant Temp' and 'Low Engine Oil Pressure'.

#### High Powered Turbo charger Doosan DE08TS 8.1 Liter Diesel Engine

- Low emission to meet EU STAGE II and EPA TIER II emission regulation
- Low noise level by 2-stage injection pressure system
- Optimized combustion chamber design for low smoke and lower fuel consumption
- High power and efficiency at high altitude by turbo-charged intake system
- Reduced diesel knocking noise by right ignition time
- Linear arrangement of cylinders for excellent serviceability
- Heavy duty fuel filter with water separator
- Design for long engine life

### ● Full Autoshift Transmission and Electric Inching System

The electric control module of the transmission automatically changes truck travel speed based on the engine speed and the load on the drive wheels. With its advanced electric control system, operator is free from the inconvenience of gear shifting while driving.

Also operator can select various operating modes, such as manual shifting, starting at low speed gear shifting or at high speed gear shifting depending on application needs. The self-diagnostics and easy check-up functions will reduce the time to troubleshoot any problems.

The electric inching system permits even massive loads to be moved with great precision. It is controlled by selection switch activated by the operator.

### ● Rugged Drive Axle

Planetary gear drive axle consists of four pinion and hypoid differential gears and radial sun and ring gears with steel housing, hardened load bearing spindle and full-floating axle shaft to protect from high impact shock loading.

Gears and bearings are positively lubricated by oil flow.

### ● Air Shoe Brakes

Large diameter and self-adjusting non-asbestos shoe brakes are provided as standard equipment. The fully air-actuated shoe brakes are boosted by large double air- compressed chambers. S-cam type mechanism provides secure brake force with low brake pedal effort. For operating safety this brake system adopts power-off system, self-lock brake system, which activates the air-parking brake in case of brake line malfunction.

### ● Side Tiltable Operator Compartment and Cab

Easy access to powertrain components is facilitated by activating the side tiltable operator compartment or optional cab at the touch of a button . The hydraulic actuated cylinder tilts operator compartment or cab to right side about 65 degrees for easy service access.

### ● Operator Area

Large, anti-skid open steps and long hand grips welded on overhead guard strut provide easy operator access to and from the seat. Infinitely adjustable tilt steer column, and deck-mounted pilot operated hydraulic control levers, ensure operator comfort and reduced fatigue. 6 direction adjustable, operator weight adjustment full-suspension deluxe seat provides comfortable working positions for all sizes of operators.

The integrated easy-to-read instrument panel alerts the operator to all truck conditions at a glance from their seated position.

### ● Optional Equipment

- Solid Soft Tyres
- Tiltable Operator Compartment and Deluxe Operator Cab
- Operator Comfort Features with Operator Cab
  - Air Conditioner / Heater
  - Sound Suppression Package
  - CD Player & Radio for Cabin
- Pilot Operated 3/4/5 Spools Hydraulic Control Valve
- Integral Sidershifter or Integral Sidershifting Fork Positioner
- 4 Working Lights
- 2 Front Lights on Fender
- Rear Strobe Lamp / Spark Arrestor
- Catalytic Muffler
- Battery Isolated Switch
- Lockable Fuel Cap



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