

ENGINE & ANCILLARIES

Yanmar TNV98

Configuration
4 cylinder

Aspiration
Naturally aspirated

Emission Level
Tier II

Governed Power
45 kW

Governed Speed
2 200 rpm

Displacement
3 319 cc

Fuel Filter Type
In-line water separator with separate spin on fuel filter.

Fuel Filter
5 µm

Coolant Capacity (Engine only)
4 litres

Radiator
Easy access and easy to clean. Agricultural spec fine dust tolerant - wide fin spacing.

Fuel Tank
Secure, lockable ground level filling. Integrated into lower section of the frame to keep a low centre of gravity.

Fuel Tank Capacity
100 litres

Air Cleaner Type
Radial Seal 2-stage primary and secondary filters, both fed by a self cleaning pre-cleaner. The system has a dash mounted restriction indicator.

HYDRAULIC SYSTEM

Hydrostatic Drive System
Servo controlled Variable displacement closed loop system.

Wheel Drive System
Robust, proven Bell planetary hub driven by high displacement radial piston motor with fail to safe spring applied hydraulically released multidisc wet brake.

Wheel Drive Make & Model
Bell #29P

Service Brake
Hydrostatic braking through the closed loop system.

Hydraulic Implement Pump 1
Maximum Flow at Engine
Rated Speed
60,9 l/min

Hydraulic Implement Pump 1
Maximum Intermittent Pressure
241 bar

Hydraulic Implement Pump 1
Use
Boom lift & lower

Hydraulic Implement Pump 2
Maximum Flow at Engine
Rated Speed
39,4 l/min

Hydraulic Implement Pump 2
Maximum Intermittent Pressure
280 bar

Hydraulic Implement Pump 2
Maximum Continuous Pressure
250 bar

Hydraulic Implement Pump 2
Use
Attachment - Grapple Open/Close, Tele Ext in/out and Rotator.

Tank
Integrated within the tubular frame

Tank Capacity
140 litres

Tank Breather
Remote to filler cap, 3 micron rating, 0.75 bar pressure.

Hydraulic Cooler Air Fin Spacing
Easy to clean wide fin spacing

ELECTRICAL

System
12 volt system with a single maintenance free battery mounted in the rear of the machine above the tail wheel.

Alternator Output
12 v 80 Amp

Starter Motor Rating
12 v 3,0 kW

Fuse Box
Blade fuses located inside the cabin in the instrumentation box.

Battery
Maintenance free gel filled battery 100 Amp Hour rating.

Battery Isolator
Single pole type with lock out mounted onto the right hand side of the frame.

Work Lights
8 lights in total. 4 Facing forwards, 2 facing rearwards, 1 facing side ways on each side of the frame.

Strobe Light
Mounted on the rear of frame

Interior lights
LED mounted inside the cab and inside the engine bay.

ESTIMATED OPERATING WEIGHTS WITH STANDARD OPTIONS

| Unladen | |
|---------|----------|
| Front: | 4 118 kg |
| Rear: | 1 349 kg |
| Total: | 5 467 kg |
| Laden | |
| Front: | 6 365 kg |
| Rear: | 375 kg |
| Total: | 6 740 kg |

Working Load Limit
1 273 kg

Tipping Load
1 400 kg

GRAPPLE

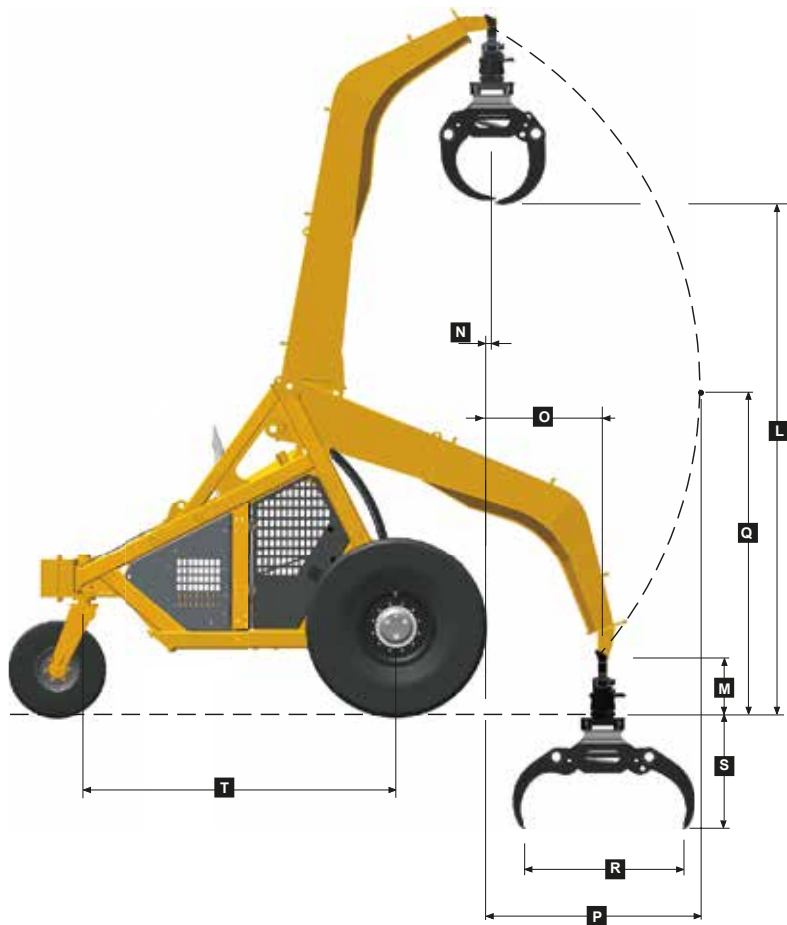
Matriarch LX36
(Matriarch LX42 as an option)

Note: Tyre sizes indicated represent available tyres at printing. Please ensure your choice is available at time of ordering.

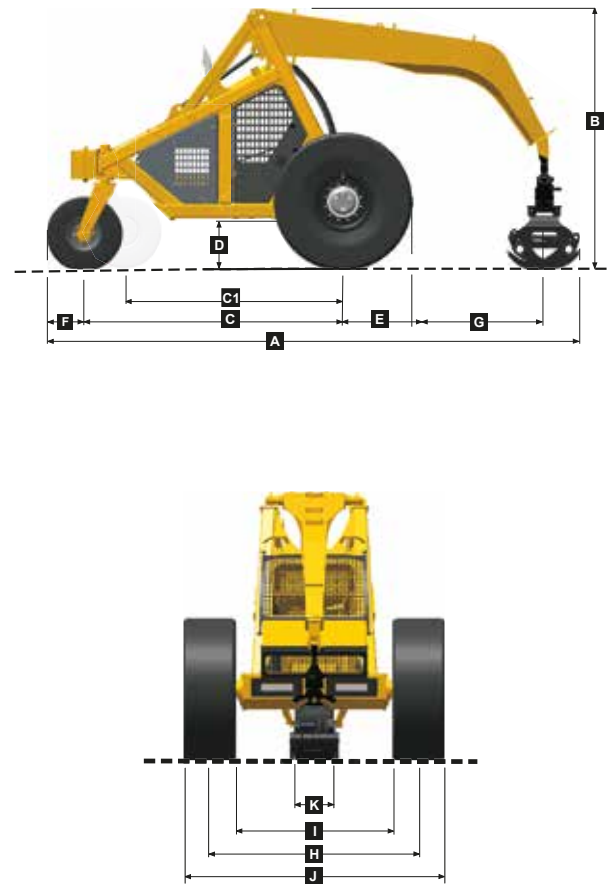
- Low capital outlay
- Low operating cost due to few working parts
 - Low fuel consumption
 - Simple to maintain
 - Multi-purpose unit
- Highly manoeuvrable

I Dimensions

OPERATING POSITION



TRANSPORT POSITION



MACHINE DIMENSIONS

| | | | | | |
|----|--|-------------------------------|----|---|----------|
| A | Length - Transport Position with LX36 Grapple Closed | 6 240 mm | I2 | 18.4 x 26 (Option 1) | 1 813 mm |
| A | Length - Transport Position with LX42 Grapple Closed | 6 370 mm | I3 | 18.4/15 x 30 (Option 2) | 1 846 mm |
| B | Height - Transport Position with Grapple Closed | 3 059 mm | I4 | 18.4 x 34 (Option 3) | 1 851 mm |
| C | Front Axle Centre to Tailwheel Axle Centre | 3 030 mm | I5 | 18.4 x 26 (Option 4-Dual Wheelset) | 1 687 mm |
| C1 | Front Axle Centre to Tailwheel Axle Centre | 2 546 mm | J | Width over Tyres - Front | |
| D | Ground Clearance - Front Axle Box | 578 mm | J1 | 18.4 x 30 (Std Wheelset) | 2 982 mm |
| E | Front Tyre - Free Radius (Free Diameter) | | J2 | 18.4 x 26 (Option 1) | 2 746 mm |
| E1 | 18.4 x 30 (Std Wheelset) | 807.5 mm (⁰ 1615) | J3 | 18.4/15 x 30 (Option 2) | 2 778 mm |
| E2 | 18.4 x 26 (Option 1) | 729 mm (⁰ 1458) | J4 | 18.4 x 34 (Option 3) | 2 787 mm |
| E3 | 18.4/15 x 30 (Option 2) | 774,5 mm (⁰ 1549) | J5 | 18.4 x 26 (Option 4-Dual Wheelset) | 3 675 mm |
| E4 | 18.4 x 34 (Option 3) | 837,5 mm (⁰ 1675) | K | Tyre Width - Tailwheel | |
| E5 | 18.4 x 26 (Option 4-Dual Wheelset) | 729 mm (⁰ 1458) | K1 | 400 x 15.5 (Std Wheelset) | 385 mm |
| F | Tailwheel - Free Radius (Free Diameter) | | K2 | 18 x 15.5 (Option 1) | 450 mm |
| F1 | 400 x 15.5 (Std Wheelset) | 432 mm (⁰ 864) | L | Load Over Height - LX36 Grapple | 4 586 mm |
| F2 | 18 x 15.5 (Option 1) | 490 mm (⁰ 980) | L | Load Over Height - LX42 Grapple | 4 480 mm |
| G | Reach - Grapple Pivot @ Ground Level - LX36 Grapple | 1 545 mm | M | Grapple Pivot Height - Boom Down Position | 529 mm |
| G | Reach - Grapple Pivot @ Ground Level - LX42 Grapple | 1 600 mm | N | Reach-Grapple Pivot - Boom Up Position | 44 mm |
| H | Track Width - Front | | O | Reach-Grapple Pivot - Boom Down Position | 1 036 mm |
| H1 | 18.4 x 30 (Std Wheelset) | 2 382 mm | P | Maximum Reach - Grapple Pivot | 1 948 mm |
| H2 | 18.4 x 26 (Option 1) | 2 279,5 mm | Q | Height - Grapple Pivot @ Maximum Reach | 2 964 mm |
| H3 | 18.4/15 x 30 (Option 2) | 2 312 mm | R | LX36 Grapple Open | 1 414 mm |
| H4 | 18.4 x 34 (Option 3) | 2 319 mm | R | LX42 Grapple Open | 1 577 mm |
| H5 | 18.4 x 26 (Option 4-Dual Wheelset) | 2 681 mm | S | Maximum Reach - Below Ground - LX36 Grapple | 1 001 mm |
| I | Inside Tyre Width - Front | | S | Maximum Reach - Below Ground - LX42 Grapple | 1 054 mm |
| I1 | 18.4 x 30 (Std Wheelset) | 1 782 mm | T | Front Axle Centre to Tailwheel Pivot Centre | 2 788 mm |

NOTE: Please refer to 225F HP for Tele Logger option dimensions.

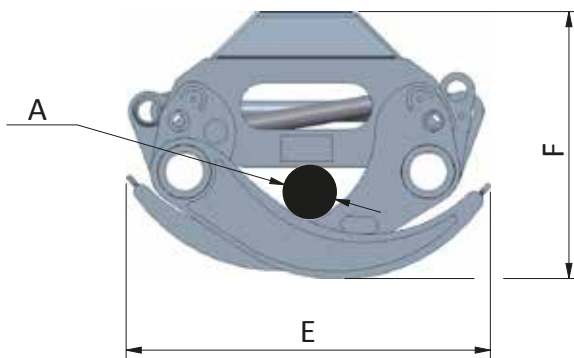
All dimensions are Unladen values based on the Standard Wheelsets and Grapple U.O.N.

Negative (-) dimension value denotes position below ground level or behind front of wheel, whichever is applicable.

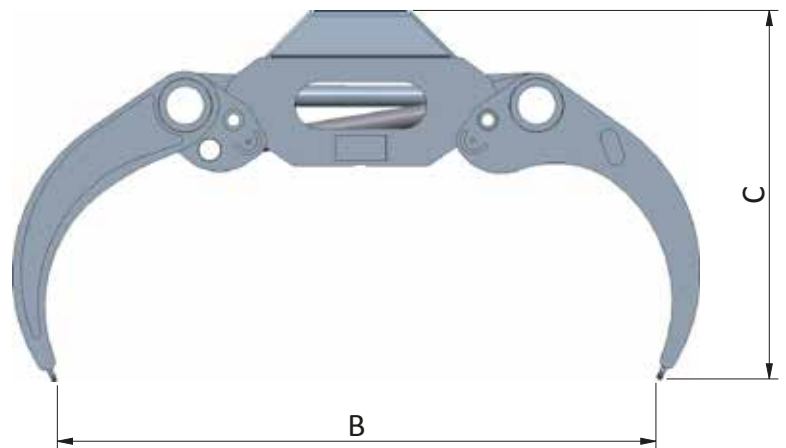
Grapple Dimensions & Operating Weights

| Bell Grapple Dimensions Dimensions in millimeters U.O.N | | | |
|---|-----------------------------|---------------------|---------------------|
| | | Matriarch LX36 | Matriarch LX42 |
| A | Min. Closed Diameter | 106 | 111 |
| B | Grapple Open | 1 630 | 1 783 |
| C | Grapple Height - Open | 823 | 893 |
| D | Grapple Height - Tip to Tip | 983 | 1 066 |
| E | Grapple Closed | 948 | 1 040 |
| F | Grapple Height - Closed | 625 | 669 |
| G | Width Outer Tines | 448 | 448 |
| Tip to Tip Area | | 0.36 m ² | 0.42 m ² |
| Weight - No Damper | | 222 kg | 247 kg |

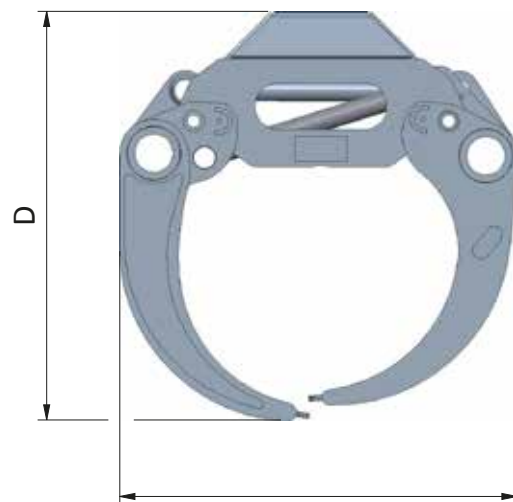
| Operating Weights | | |
|--------------------------|--------------------|--------------|
| | Working Load Limit | Tipping Load |
| 225F Crank Logger | 1 273 kg | 1 400 kg |
| 225F HP Tele Logger | | |
| Boom In | 1 568 kg | 1 725 kg |
| Boom Out | 1 051 kg | 1 157 kg |
| 125F Cane Loader | 1 100 kg | 1 210 kg |
| 225F Forklift | 3 500 kg | - |



GRAPPLE CLOSED POSITION



GRAPPLE OPEN POSITION



GRAPPLE TIP TO TIP POSITION

Cab Options



| | 225F Crank Logger | 225F HP Tele Logger | 125F Cane Loader | 225F Forklift | CAB TRIM | Engine Doors | Cab Doors | Windscreen | Cab Door Glass | Roof Lining | Sound Kit >85dB | Air Conditioning |
|---|-------------------|---------------------|------------------|---------------|--|--------------|-----------|------------|----------------|-------------|-----------------|------------------|
| ● | ▲ | ● | ▲ | | Basic option | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| ▲ | ▲ | ▲ | ● | | Cab doors (no glazing) | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| ▲ | ▲ | ■ | ▲ | | Windscreen & wiper/washer | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| ▲ | ▲ | ■ | ▲ | | Windscreen & wiper/washer with cab doors (no glazing in doors) | ✓ | ✓ | ✓ | ✗ | ✗ | | |
| ▲ | ● | ■ | ▲ | | Full Deluxe (full glazing) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

- STANDARD
- ▲ OPTION
- NOT AVAILABLE
- ✓ INCLUDED
- ✗ NOT INCLUDED

Features and Options

● STANDARD ▲ OPTION - NOT AVAILABLE

| | 225F Crank Logger | 225F HP Tele Logger | 125F Cane Loader | 225F Forklift | |
|------------------------|-------------------|---------------------|------------------|---------------|---|
| FRONT WHEELSETS | | | | | |
| ● | ▲ | ▲ | ▲ | ▲ | 460/85-30 T410 |
| ▲ | ▲ | ● | ● | ● | 18.4 x 26 12 Ply |
| ▲ | ▲ | ▲ | - | - | Dual, 18.4 x 26 12 Ply |
| ▲ | ● | - | - | - | 23.1-26 T418FS |
| REAR WHEELSETS | | | | | |
| ● | ▲ | ● | ▲ | ▲ | 400/60-15.5 T404 |
| ▲ | ● | ▲ | - | - | 18.0 x 15.5 EcoAgri |
| - | - | - | ● | ● | 400/60-15.5 BKT TR822 14Ply |
| SEAT | | | | | |
| ● | ▲ | ● | ● | ● | Unsuspending Lap Belt |
| ▲ | ● | ▲ | ▲ | ▲ | Suspended |
| ▲ | ▲ | ▲ | ▲ | ▲ | Unsuspending 4 Point Harness |
| ATTACHMENT | | | | | |
| - | ▲ | - | - | - | Matriarch LX36 |
| ▲ | ● | - | - | - | Matriarch LX42 |
| - | - | ● | - | - | Cane Grab |
| - | - | - | ● | ● | Fork-lift with 1.2, Wide Carriage |
| - | - | - | ▲ | ▲ | Fork-lift with 2.5, Wide Carriage |
| - | - | - | POA | POA | Fork-lift with Brick Clamp |
| - | - | - | POA | POA | Fork-lift with Tyre Clamp |
| WORK LIGHTS | | | | | |
| ● | ● | ● | ● | ● | Halogen Lights |
| ▲ | ▲ | ▲ | ▲ | ▲ | LED 1800L |
| ▲ | ▲ | ▲ | ▲ | ▲ | LED 3500L |
| BOOM | | | | | |
| - | - | ● | - | - | Cane Boom |
| ● | ▲ | - | - | - | Crank Boom |
| ▲ | ● | - | - | - | Tele Boom |
| ▲ | ▲ | - | - | - | Ext Tele Boom |
| COUNTER WEIGHT | | | | | |
| ▲ | ▲ | ● | ▲ | ▲ | 1 Weight |
| ● | ▲ | ▲ | ▲ | ▲ | 4 Weights |
| ▲ | ● | ▲ | ▲ | ▲ | 6 Weights |
| ▲ | ▲ | ▲ | ● | ▲ | 7 Weights |
| MISCELLANEOUS | | | | | |
| ● | ▲ | ● | ● | ● | Rear View Side Mirrors <i>(Note: not available if Log Rest Option is selected)</i> |
| ▲ | ▲ | - | ▲ | ▲ | Door Proximity Switches |
| ▲ | ● | - | - | - | Log Rest |
| ▲ | ▲ | ▲ | ▲ | ▲ | Fire Extinguisher Bracket |

| | 225F Crank Logger | 225F HP Tele Logger | 125F Cane Loader | 225F Forklift | |
|---------------------------------------|-------------------|---------------------|------------------|---------------|--|
| WARNING LIGHTS/INSTRUMENTATION | | | | | |
| ● | ● | ● | ● | ● | Hydraulic charge filter bypass |
| ● | ● | ● | ● | ● | Engine oil pressure |
| ● | ● | ● | ● | ● | Engine coolant temperature high |
| ● | ● | ● | ● | ● | Hydraulic oil temperature high |
| ● | ● | ● | ● | ● | Air cleaner blocked |
| ● | ● | ● | ● | ● | Low fuel |
| ● | ● | ● | ● | ● | Battery charge |
| ● | ● | ● | ● | ● | Cold start |
| ● | ● | ● | ● | ● | Park brake active |
| ▲ | ▲ | ▲ | ▲ | ▲ | Reverse Camera |
| ▲ | ▲ | ▲ | ▲ | ▲ | Fleetm@tic® |
| SWITCHES | | | | | |
| ● | ● | ● | ● | ● | Ignition (key) |
| ● | ● | ● | ● | ● | Hour metre |
| ● | ● | ● | ● | ● | Park brake |
| ● | ● | ● | ● | ● | Horn |
| ● | ● | ● | ● | ● | Interior lights |
| ● | ● | ● | ● | ● | Cold start aid |
| ● | ● | ● | ● | ● | Battery isolator |
| SENSORS | | | | | |
| ● | ● | ● | ● | ● | Low fuel level |
| ▲ | ▲ | ▲ | ▲ | ▲ | Door open proximity switch (if doors are fitted) |
| ● | ● | ● | ● | ● | Air cleaner blocked |
| ● | ● | ● | ● | ● | Hydraulic charge filter bypass |
| ● | ● | ● | ● | ● | Engine oil pressure |
| ● | ● | ● | ● | ● | Engine coolant temp |
| ● | ● | ● | ● | ● | Hydraulic oil temperature |
| ▲ | ▲ | ▲ | ▲ | ▲ | Reverse alarm |
| CAB (see page 15 for details) | | | | | |
| ● | ▲ | ● | ▲ | ▲ | Basic option |
| ▲ | ▲ | ▲ | ● | ▲ | Cab doors (no glazing) |
| ▲ | ▲ | - | ▲ | ▲ | Windscreen and wiper/washer |
| ▲ | ▲ | - | ▲ | ▲ | Windscreen and wiper/washer with cab doors (no glazing in doors) |
| ▲ | ● | - | ▲ | ▲ | Full deluxe (full glazing) |
| LANGUAGE | | | | | |
| ● | ▲ | ● | ● | ● | English |
| ▲ | ▲ | ▲ | ▲ | ▲ | French |
| ▲ | ● | ▲ | ▲ | ▲ | Spanish |

Please note that all information supplied in this brochure is intended to assist the customer in understanding the general applications of Bell Equipment's F-series machines.


Performance information is intended for estimating purposes only. Due to the many variables unique to individual operations such as weather, terrain, ground conditions, operator productivity, etc neither Bell Equipment Company nor its Dealers warrant that the machines described will perform as estimated.


Due to Bell Equipment's policy of constant product improvement, specifications are subject to change without notice.


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