


# TVL163

## 80V DUAL-DRIVE THREE-WHEEL COUNTERBALANCE FORKLIFT 1.6T

1600 kg | 6000 mm | Li-Ion



The TVL163 is an 80V lithium-ion 3-wheel forklift purpose-built for loading, unloading, and stocking goods in production plants, retail storage, and logistics hubs, including low-ceiling warehouse environments, thanks to the overhead guard height below 2 meters. Its compact chassis and tight turning radius enable agile operation in confined aisles, while the dual 80V PMS motors ensure stable power output for smooth lifting and acceleration. TVL offers energy-efficient operation, minimal noise, and outstanding operator comfort — even in continuous-use applications.

| SPECIFICATION | REF | UNIT | VALUE |
|---|---|---|---|
| Manufacturer | | | EP |
| Model designation | | | TVL163 |
| Battery voltage/nominal capacity | | V/Ah | 80/150 |
| Rated capacity | Q | kg | 1600 |
| Load centre distance | c | mm | 500 |
| Service weight | | kg | 3234 |
| Height, mast lowered | $h_1$ | mm | 1995 |
| Lift | $h_3$ | mm | 3000 |
| Height, mast extended | $h_4$ | mm | 4054 |
| Overall length | $l_1$ | mm | 2830 |
| Overall width | $b_1/b_2$ | mm | 1062 |
| Length to face of forks | $l_2$ | mm | 1910 |
| Fork dimensions | s/e/l | mm | 40*100*920 |
| Turning radius | Wa | mm | 1556 |
| Drive | | | Electric |
| Operator type | | | Seated |

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# Features

## Integral cast chassis for superior stability

The TVL163/183/203 is built on EP's self-developed integral cast chassis design, which means there's no longer a joint interface between chassis and counterweight. It delivers outstanding structural strength and a naturally lower center of gravity. This ensures excellent truck stability even under full load and at high lift heights, while minimizing vibration and mast shaking. The robust frame further enhances durability, extending the service life of the truck.






## Compact size for low-clearance and tight spaces

With an overall height of less than 2,000 mm, the TVL163/183/203 is designed for seamless operation in confined spaces such as containers, underground garages, and low-ceiling warehouses. Combined with a tight turning radius of just 1,556mm, this compact truck offers agility, enabling operators to retrieve and stack efficiently in areas where conventional forklifts simply cannot fit.

## 80V Dual drive motors and PMSM technology

Equipped with 80V dual drive motors with advanced Permanent Magnet Synchronous Motor (PMSM) technology, the TVL163/183/203 delivers sensitive steering and up to 10-15% energy savings compared with conventional forklifts.





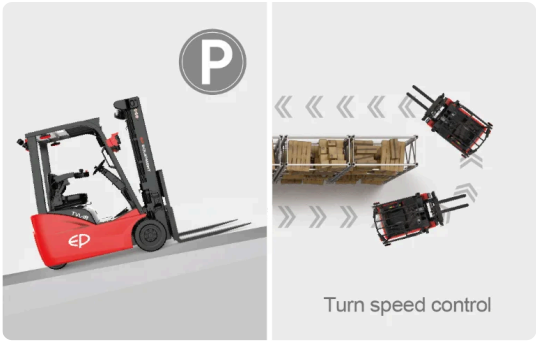

## Dual charging flexibility

The lithium-powered TVL163/183/203 is equipped as standard with an 80V/35A internal single-phase charger and a plug for external charger connection. The selection of external single-phase or three-phase chargers with power up to 80V/100A gives operators flexible and efficient charging options for all working scenarios.

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## Safety-guaranteed functions

Safety is further supported by automatic stop on ramp, electromagnetic parking brake, and turn speed control, making every turn and stop at ramp secure.






## Effortless and precise control

Multiple functions are integrated into the armrest, within easy reach at the palm-sized control area, operated via fingertip or joystick, and include:
forward/reverse direction switch, lifting/lowering, tilting, sideshift and 4th way, horn, turning light switch, storage box with USB port, emergency switch.
The proportional hydraulic valve ensures precise control of all hydraulic functions without affecting steering beheaviur

## Ergonomic and spacious operator workplace

The new chassis layout creates a larger operating space, giving drivers more legroom and comfort during long shifts. Combined with a wide-view mast and optimized overhead guard design, the TVL163/183/203 provides excellent visibility and minimizes blind spots, ensuring both a comfortable and safe driving experience.



# VDI Chart

| | SPECIFICATION | REF | UNIT | VALUE |
|---|---|---|---|---|
| 1.1 | Manufacturer | | | EP |
| 1.2 | Model designation | | | TVL163 |
| 1.3 | Drive | | | Electric |
| 1.4 | Operator type | | | Seated |
| 1.5 | Rated capacity | Q | kg | 1600 |
| 1.6 | Load centre distance | c | mm | 500 |
| 1.8 | Load distance, centre of drive axle to fork | x | mm | 382 |
| 1.9 | Wheelbase | y | mm | 1298 |
| 2.1 | Service weight | | kg | 3234 |
| 2.2 | Axle loading, laden front/rear | | kg | 4258/576 |
| 2.3 | Axle loading, unladen front/rear | | kg | 1571/1663 |

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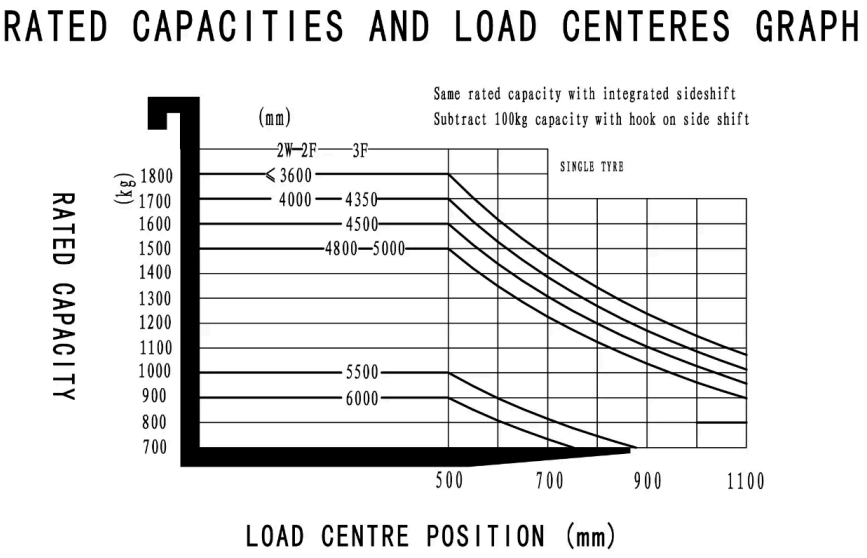
| | SPECIFICATION | REF | UNIT | VALUE |
|---|---|---|---|---|
| 3.1 | Tyres | | | Solidrubber |
| 3.2 | Tyre size, front | | mm | 18*7-8 |
| 3.3 | Tyre size, rear | | mm | 140/55-9 |
| 3.5 | Wheels, number front/rear (x=drive wheels) | | | 2x/2 |
| 3.6 | Tread width, front | $b_{10}$ | mm | 905 |
| 3.7 | Tread width, rear | $b_{11}$ | mm | 215 |
| 4.1 | Tilt of mast/fork carriage forward/backward | α/β | ° | 5/5 |
| 4.2 | Height, mast lowered | $h_1$ | mm | 1995 |
| 4.3 | Free lift | $h_2$ | mm | 100 |
| 4.4 | Lift | $h_3$ | mm | 3000 |
| 4.5 | Height, mast extended | $h_4$ | mm | 4054 |
| 4.7 | Height of overhead guard (cabin) | h6 | mm | 1984 |
| 4.8 | Seat height relating to SIP/stand height | h7 | mm | 1017 |
| 4.12 | Coupling height | h10 | mm | 492 |
| 4.19 | Overall length | $l_1$ | mm | 2830 |
| 4.20 | Length to face of forks | $l_2$ | mm | 1910 |
| 4.21 | Overall width | $b_1/b_2$ | mm | 1062 |
| 4.22 | Fork dimensions | s/e/l | mm | 40*100*920 |
| 4.23 | Fork carriage ISO 2328, class/type A, B | | | 2A |
| 4.24 | Fork carriage width | $b_3$ | mm | 1040 |
| 4.31 | Ground clearance, laden, below mast | $m_1$ | mm | 90 |
| 4.32 | Ground clearance, centre of wheelbase | $m_2$ | mm | 110 |
| 4.34.1 | Aisle width for pallets 1000×1200 crossways | Ast | mm | 3263 |
| 4.34.2 | Aisle width for pallets 800 × 1200 lengthways | Ast | mm | 3388 |
| 4.35 | Turning radius | Wa | mm | 1556 |
| 5.1 | Travel speed, laden/unladen | | km/h | 13/14 |
| 5.2 | Lift speed, laden/unladen | | m/s | 0.36/0.45 |
| 5.3 | Lowering speed, laden/unladen | | m/s | 0.45/0.43 |
| 5.5 | Drawbar pull, laden/unladen | | | 1611/1089 |
| 5.6 | Max. drawbar pull, laden/unladen | | N | 11091/8189 |
| 5.8 | Max. gradeability, laden/unladen | | % | 15/17 |
| 5.10 | Service brake | | | Electromagnetic |
| 5.11 | Parking brake | | | Electromagnetic |
| 6.1 | Drive motor rating S2 60 min | | kW | 5.0X2 |

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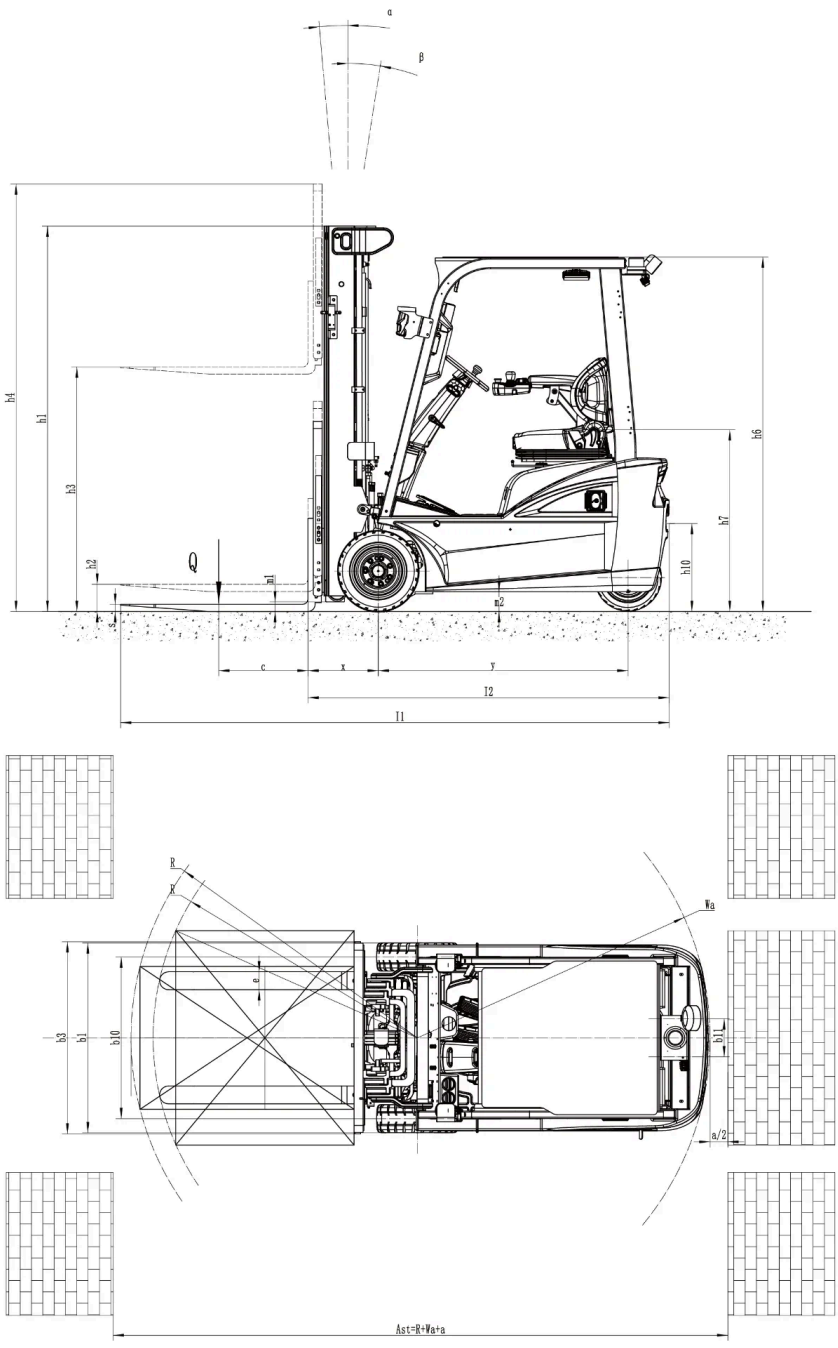
| | SPECIFICATION | REF | UNIT | VALUE |
|---|---|---|---|---|
| 6.2 | Lift motor rating at S3 15% | | kW | 16 |
| 6.4 | Battery voltage/nominal capacity | | V/Ah | 80/150 |
| 6.4.3 | Battery type | | | Li-Ion |
| 6.5 | Battery weight | | kg | 165 |
| 6.6 | Energy consumption according to DIN EN 16796 | | kWh/h | 5.13 [1)] |
| 6.7 | Turnover output according to VDI 2198 | | t/h | 96 |
| 6.8 | Turnover efficiency according to VDI 2198 | | t/kWh | 21 |
| 8.1 | Type of drive unit | | | PMSM |
| 10.1 | Operating pressure for attachments | | bar | 180 |
| 10.2 | Oil volume for attachments | | ℓ/min | 35 |
| 10.5 | Steering design | | | Hydraulic |
| 10.7 | Sound pressure level at the driver's seat | | dB(A) | 65 |
| 15.1 | Charger output current | | A | 35 |

Subject to modification of specifications and designs without prior notice as part of continuous product improvement. Images and technical data shown may include optional features and are provided for reference only. All dimensions are subject to standard manufacturing tolerances.

# VDI Drawing




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# Mast Options

| MAST TYPE | LIFT HEIGHT (H3, MM) | MAST LOWERED HEIGHT (H1, MM) | MAST EXTENDED HEIGHT, NO BACKREST (H4, MM) | MAST EXTENDED HEIGHT, WITH BACKREST (H4, MM) | FREE LIFT HEIGHT, NO BACKREST (H2, MM) | FREE LIFT HEIGHT, WITH BACKREST (H2, MM) |
|---|---|---|---|---|---|---|
| 2-Standard Mast | 3000 | 1995 | 3665 | 4054 | 100 | 100 |
| 2-Standard Mast | 3600 | 2295 | 4265 | 4654 | 100 | 100 |

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| MAST TYPE | LIFT HEIGHT (H3, MM) | MAST LOWERED HEIGHT (H1, MM) | MAST EXTENDED HEIGHT, NO BACKREST (H4, MM) | MAST EXTENDED HEIGHT, WITH BACKREST (H4, MM) | FREE LIFT HEIGHT, NO BACKREST (H2, MM) | FREE LIFT HEIGHT, WITH BACKREST (H2, MM) |
|---|---|---|---|---|---|---|
| 2-Standard Mast | 4000 | 2545 | 4665 | 5054 | 100 | 100 |
| 2-Free Mast | 3000 | 1995 | 3665 | 4054 | 1360 | 970 |
| 2-Free Mast | 3600 | 2295 | 4265 | 4655 | 1660 | 1270 |
| 2-Free Mast | 4000 | 2545 | 4665 | 5055 | 1910 | 1520 |
| 3-Free Mast | 4350 | 2010 | 5015 | 5404 | 1375 | 835 |
| 3-Free Mast | 4500 | 2060 | 5165 | 5554 | 1425 | 1035 |
| 3-Free Mast | 4800 | 2160 | 5465 | 5854 | 1525 | 1135 |
| 3-Free Mast | 5000 | 2225 | 5665 | 6054 | 1590 | 1200 |
| 3-Free Mast | 5500 | 2395 | 6165 | 6554 | 1760 | 1370 |
| 3-Free Mast | 6000 | 2610 | 6665 | 7054 | 1975 | 1585 |

# Options

| ITEM | OPTIONS (optional items marked in yellow) |
|---|---|
| Fork dimension | Can be customized \| 100*40*920 \| 100*40*1070 \| 100*40*1150 \| 100*40*1200 \| 100*40*1220 \| 100*40*1370 |
| Front wheel material | Normal solid \| Non-marking solid |
| Rear wheel material | Normal solid \| Non-marking solid |
| Battery capacity | 80V150AH \| 80V230AH \| 80V314AH |
| Charger | 80V-35A integrated charger \| 80V-60A external charger \| 80V-65A external charger \| 80V-100A external charger \| 80V-150A external charger |
| Battery indicator | With hourmeter (Bluetooth) with ESP |
| Seat type | Comfortable + safety belt switch \| GRAMMER-MSG65 \| Suspension + safety belt switch |
| Attachments | No \| Built-in sideshifter \| External shifter \| Fork positioner with sideshift |
| Traction pin | Yes and not customized |
| Electrostatic chain | Yes and not customized |
| Front lamp | LED |
| Rear lamp | No \| LED |
| Warning lamp | LED |

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| ITEM | OPTIONS (optional items marked in yellow) |
|---|---|
| Steering lamp | LED |
| Blue lamp | No \| Rear \| Front and rear |
| Area warning lamp | No \| Both side \| Both side and rear |
| Rearview mirror | One in front \| Two on sides and one in front |
| Buzzer | Yes and not customized |
| OPS system | Yes and not customized |
| USB interface | USB TYPE A/C |
| Telematics | Yes and not customized \| No |
| Cabin | No \| Basic half-cabin \| Upgrade half cabin \| Full cabin |
| Overhead guard | Standard \| With tempered glass |
| AS/NZS function package | No \| Yes and not customized |
| Turn speed control | Yes and not customized |
| Heating system during lithium battery charging | No \| Yes and not customized |
| Operator identification device | No |
| Lifting electronic limit | No \| Yes and not customized |
| Hydraulic system operating mode | Joystick \| Fingertip |
| Rear armrest horn | Yes and not customized |
| Automatic Parking Brake | Yes and not customized |

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