

# EFL80-6-HV-PRO

HIGH CAPACITY ELECTRIC COUNTERBALANCED FORKLIFT 8.0T

 8000 kg  7000 mm  309 V Li-Ion



Diverse Loads, We got you.  
The EFL80/100-HV PRO is engineered for the most demanding heavy-duty applications in industries like mining, quarry and stone industry, heavy equipment manufacturing, etc. The dual front wheels offer superior load distribution and stability when handling extraordinarily heavy loads.

| SPECIFICATION           | REF                            | UNIT | VALUE          |
|-------------------------|--------------------------------|------|----------------|
| Manufacturer            |                                |      | EP             |
| Model designation       |                                |      | EFL80-6-HV-PRO |
| Battery voltage         |                                | V    | 309            |
| Rated capacity          | Q                              | kg   | 8000           |
| Load centre distance    | c                              | mm   | 600            |
| Service weight          |                                | kg   | 12325          |
| Height, mast lowered    | h <sub>1</sub>                 | mm   | 2850           |
| Lift                    | h <sub>3</sub>                 | mm   | 3000           |
| Height, mast extended   | h <sub>4</sub>                 | mm   | 4310           |
| Overall length          | l <sub>1</sub>                 | mm   | 5475           |
| Overall width           | b <sub>1</sub> /b <sub>2</sub> | mm   | 2200           |
| Length to face of forks | l <sub>2</sub>                 | mm   | 3955           |
| Fork dimensions         | s/e/l                          | mm   | 75×160×1520    |
| Turning radius          | Wa                             | mm   | 3605           |
| Drive                   |                                |      | Electric       |
| Operator type           |                                |      | Seated         |

# Features

## High Performance: High speed and high gradeability

High-voltage Li-ion batteries enable more power delivery to motors, improving acceleration and travel speeds for high-capacity trucks. PMSMs complement this with rapid response times, swiftly reaching required speeds and torques. This combination of PMSM and high voltage can provide stable and strong power output, which further gives high-capacity trucks excellent climbing capabilities ensuring that the forklift can cope with various applications with ease.

The high-voltage model offers a 1.5-2 times performance improvement over the low-voltage model. Taking the 10-ton model as an example:

100% improvement in travel speed for high voltage models in laden and unladen conditions.

The high-voltage model demonstrates a 45% faster lifting speed.

100% improvement in gradeability when unladen, 45% improvement when laden for high voltage models.



## Energy Efficiency: extended runtime and fast charging

High-voltage Li-ion batteries have high energy density and can store more electrical energy within a compact volume. Notably, these high-voltage Li-ion batteries boast an impressive cycle life of up to 4000 cycles, ensuring long-term durability and minimizing the need for battery replacements.

The PMSMs incorporate advanced control technology to optimize motor efficiency. Unlike traditional AC motors, PMSMs have higher energy conversion efficiency and reduce energy waste.

Equipped with fast charging capabilities, the high-voltage models are compatible with vehicle-grade charging stations and support 1C charging rating, allowing them to be fully charged in as fast as 1-1.2 hours. This minimizes downtime and maximizes productivity, making it ideal for multi-shift operations.

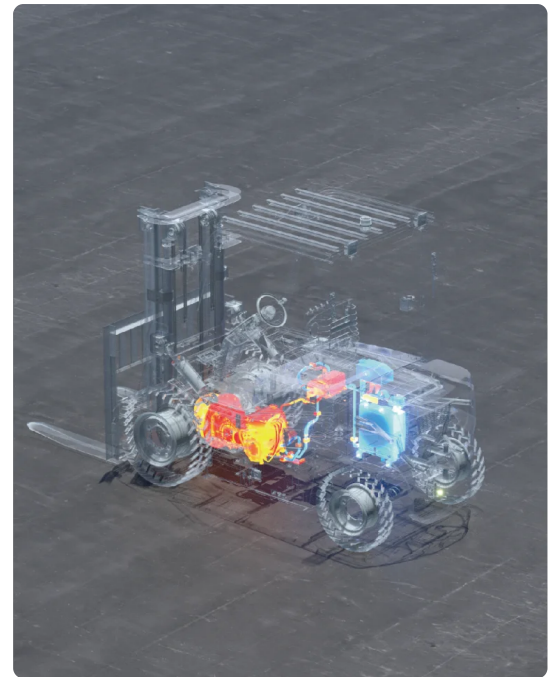


## Safety Assured: Battery, motor protection, monitoring and mast buffering

The central controlling module- VCU (Vehicle Control Unit) extends the safety of the high-voltage forklifts. VCU provides precise control and real-time monitoring of critical parameters to ensure the truck operates within safe limits.

It also features turn speed control, which adjusts the forklift's speed based on the turning angle, ensuring stability during turns. An over-speed alarm alerts the operator if the forklift exceeds the safe speed limit.\*

The high-capacity forklift mast is equipped with a hydraulic buffering system that ensures smooth lifting and lowering of loads. The mast width and the mast-to-chassis connection have been widened, providing a wider field of vision and better stability at height, allowing operators to handle loads with greater confidence and precision.



## Smart and reliable strategy for thermal management

The high-capacity trucks utilize three distinct cooling systems to ensure optimal performance and reliability. Specifically, two water cooling systems are employed for the motor and the battery, while an oil cooling system is dedicated to the hydraulics system. The upgraded 2-in-1 water cooling unit simplifies pipeline layout, improving system efficiency and reducing potential leakage points while maintaining excellent cooling performance.

The water cooling systems provide superior cooling performance, preventing the truck from overheating even under the most demanding conditions or in the heat of summer.

Additionally, water cooling systems typically operate with less noise compared to air cooling systems that rely on high-speed fans.

The oil cooling system, on the other hand, is used for the hydraulics system. This system ensures that the hydraulic components remain within optimal temperature ranges, thereby maintaining their efficiency and preventing overheating.



## Low maintenance: Longer battery life span and reliable components

Operating at a higher voltage allows the battery to be designed with fewer individual cells. The integrated battery pack design further streamlines the structure, improving reliability while reducing maintenance complexity and potential failure points.

The integrated hydraulic motor design further simplifies the system, improving reliability while reducing maintenance. Key components including the motor, controller and in-house developed battery are all IP67 rated and equipped with water-cooling, ensuring stable performance under demanding conditions.



## Sustainability : Zero emissions for cleaner environment

As fully electric trucks powered by lithium-ion batteries, these forklifts produce zero emissions during operation, eliminating exposure to toxic fumes like carbon monoxide and nitrogen oxides. Unlike lead-acid batteries which can leak corrosive acid, lithium-ion batteries do not risk hazardous spills. The high-capacity li-ion trucks contribute to a cleaner and safer indoor working environment without compromising handling capabilities.

## Strong adaptability adaptable to harsh outdoor weather conditions

Experience uninterrupted productivity through rain, puddles, and damp conditions with the overall IPX4 rating. Plus an exceptional IP67 rating for high-voltage components. Engineered to withstand harsh temperature, high-capacity trucks offer an ambient temperature range of  $-20^{\circ}\text{C}$  ~  $40^{\circ}\text{C}$  allowing them to perform no matter climate.

Battery heating when charging comes as a standard function for high capacity models, which is activated when the surrounding temperature is below zero to always offer an optimal temperature range for efficient and safe charging even in cold weather conditions.

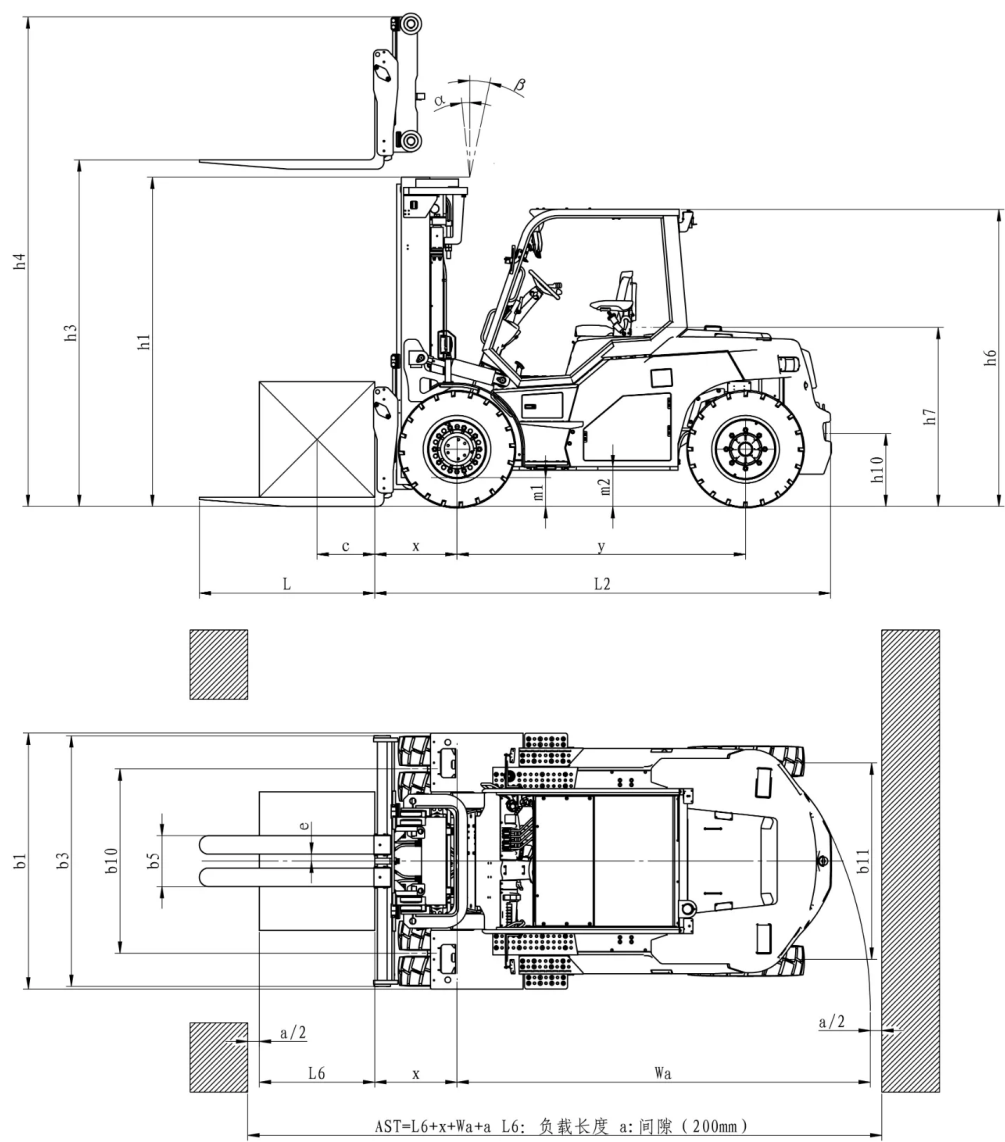


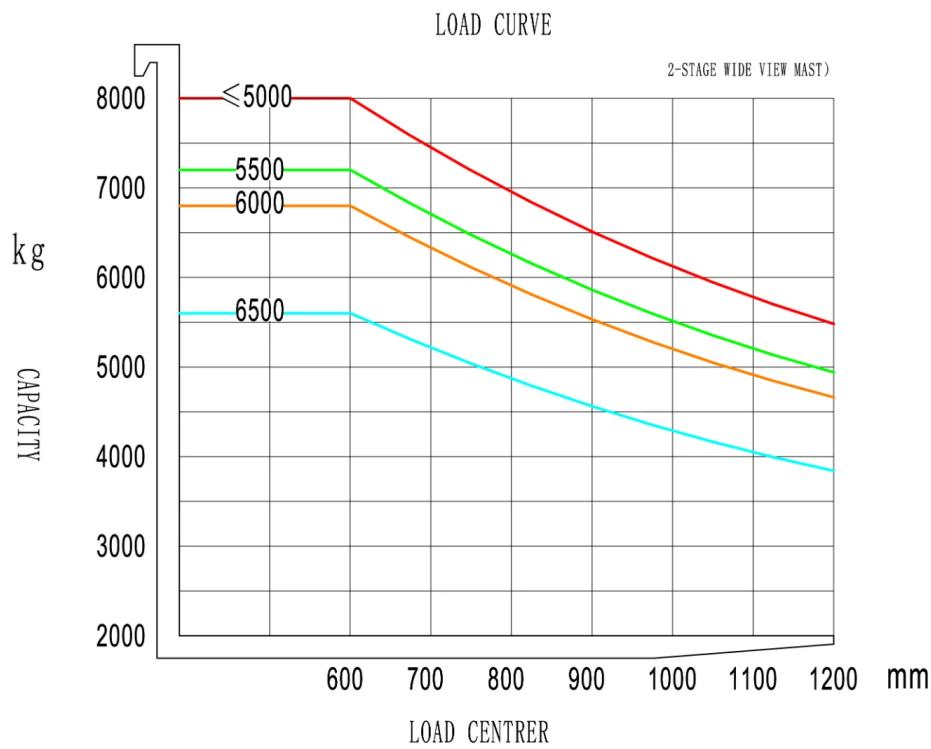
# VDI Chart

| SPECIFICATION |                                              | REF             | UNIT | VALUE          |
|---------------|----------------------------------------------|-----------------|------|----------------|
| 1.1           | Manufacturer                                 |                 |      | EP             |
| 1.2           | Model designation                            |                 |      | EFL80-6-HV-PRO |
| 1.3           | Drive                                        |                 |      | Electric       |
| 1.4           | Operator type                                |                 |      | Seated         |
| 1.5           | Rated capacity                               | Q               | kg   | 8000           |
| 1.6           | Load centre distance                         | c               | mm   | 600            |
| 1.8           | Load distance, centre of drive axle to fork  | x               | mm   | 708            |
| 1.9           | Wheelbase                                    | y               | mm   | 2500           |
| 2.1           | Service weight                               |                 | kg   | 12325          |
| 2.2           | Axle loading, laden front/rear               |                 | kg   | 18290/2035     |
| 2.3           | Axle loading, unladen front/rear             |                 | kg   | 6105/6220      |
| 3.1           | Tyres                                        |                 |      | Pneumatic      |
| 3.2           | Tyre size, front                             |                 | mm   | 9.00-20-14PR   |
| 3.3           | Tyre size, rear                              |                 | mm   | 9.00-20-14PR   |
| 3.5           | Wheels, number front/rear (x=drive wheels)   |                 |      | 4x/2           |
| 3.6           | Tread width, front                           | b <sub>10</sub> | mm   | 1600           |
| 3.7           | Tread width, rear                            | b <sub>11</sub> | mm   | 1700           |
| 4.1           | Tilt of mast/fork carriage forward/backward  | $\alpha/\beta$  | °    | 6/12           |
| 4.2           | Height, mast lowered                         | h <sub>1</sub>  | mm   | 2850           |
| 4.2.1         | Overall height                               |                 | mm   | 4310           |
| 4.3           | Free lift                                    | h <sub>2</sub>  | mm   | 195            |
| 4.4           | Lift                                         | h <sub>3</sub>  | mm   | 3000           |
| 4.5           | Height, mast extended                        | h <sub>4</sub>  | mm   | 4310           |
| 4.6           | Initial lift                                 |                 | mm   | 195            |
| 4.7           | Height of overhead guard (cabin)             | h <sub>6</sub>  | mm   | 2560           |
| 4.8           | Seat height relating to SIP/stand height     | h <sub>7</sub>  | mm   | 1550           |
| 4.9           | Height drawbar in driving position min./max. | h <sub>14</sub> | mm   | 1550           |
| 4.12          | Coupling height                              | h <sub>10</sub> | mm   | 630            |
| 4.13          | Loading height, unladen                      |                 |      | 2850           |
| 4.15          | Height, lowered                              | h <sub>13</sub> | mm   | 4310           |
| 4.19          | Overall length                               | l <sub>1</sub>  | mm   | 5475           |
| 4.20          | Length to face of forks                      | l <sub>2</sub>  | mm   | 3955           |

|        | SPECIFICATION                                 | REF                            | UNIT  | VALUE                |
|--------|-----------------------------------------------|--------------------------------|-------|----------------------|
| 4.21   | Overall width                                 | b <sub>1</sub> /b <sub>2</sub> | mm    | 2200                 |
| 4.22   | Fork dimensions                               | s/e/l                          | mm    | 75×160×1520          |
| 4.23   | Fork carriage ISO 2328, class/type A, B       |                                |       | -                    |
| 4.24   | Fork carriage width                           |                                | mm    | 2130                 |
| 4.31   | Ground clearance, laden, below mast           |                                | mm    | 250                  |
| 4.32   | Ground clearance, centre of wheelbase         | m <sub>2</sub>                 | mm    | 295                  |
| 4.34.1 | Aisle width for pallets 1000×1200 crossways   | Ast                            | mm    | 6033                 |
| 4.34.2 | Aisle width for pallets 800 × 1200 lengthways | Ast                            | mm    | 6033                 |
| 4.35   | Turning radius                                | Wa                             | mm    | 3605                 |
| 5.1    | Travel speed, laden/unladen                   |                                | km/h  | 29/30                |
| 5.2    | Lift speed, laden/unladen                     |                                | m/s   | 0.42/0.47            |
| 5.3    | Lowering speed, laden/unladen                 |                                | m/s   | 0.46/0.40            |
| 5.5    | Drawbar pull, laden/unladen                   |                                |       | /                    |
| 5.6    | Max. drawbar pull, laden/unladen              |                                | N     | /                    |
| 5.8    | Max. gradeability, laden/unladen              |                                | %     | 22/28                |
| 5.10   | Service brake                                 |                                |       | Mechanical/Hydraulic |
| 5.11   | Parking brake                                 |                                |       | Mechanical           |
| 6.1    | Drive motor rating S2 60 min                  |                                | kW    | 60                   |
| 6.2    | Lift motor rating at S3 15%                   |                                | kW    | 78.5                 |
| 6.4.1  | Battery voltage                               |                                | V     | 309                  |
| 6.4.2  | Battery nominal capacity K5                   |                                | Ah    | 309V/314Ah           |
| 6.4.3  | Battery type                                  |                                |       | Li-Ion               |
| 6.5    | Battery weight                                |                                | kg    | 850                  |
| 6.6    | Energy consumption according to DIN EN 16796  |                                | kWh/h | / <sup>1)</sup>      |
| 6.7    | Turnover output according to VDI 2198         |                                |       | /                    |
| 6.8    | Turnover efficiency according to VDI 2198     |                                |       | /                    |
| 8.1    | Type of drive unit                            |                                |       | PMSM                 |
| 10.2   | Oil volume for attachments                    |                                | ℓ/min | /                    |
| 10.5   | Steering design                               |                                |       | Hydraulic            |
| 10.7   | Sound pressure level at the driver's seat     |                                | dB(A) | /                    |
| 15.1   | Charger output current                        |                                | A     | /                    |

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.





## 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) | FORWARD TILT (A, DEG) | BACKWARD TILT (B, MM) | LOAD DISTANCE (X, MM) |
|-----------------|----------------------|------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------|------------------------------------------|-----------------------|-----------------------|-----------------------|
| 2-Standard Mast | 3000                 | 2850                         | 4310                                       | —                                            | 195                                    | —                                        | 6                     | 12                    | 600                   |
| 2-Standard Mast | 3300                 | 3000                         | 4610                                       | —                                            | 195                                    | —                                        | 6                     | 12                    | 600                   |
| 2-Standard Mast | 3500                 | 3100                         | 4810                                       | —                                            | 195                                    | —                                        | 6                     | 12                    | 600                   |
| 2-Standard Mast | 4000                 | 3350                         | 5310                                       | —                                            | 195                                    | —                                        | 6                     | 12                    | 600                   |
| 2-Standard Mast | 4500                 | 3650                         | 5820                                       | —                                            | 195                                    | —                                        | 6                     | 6                     | 600                   |
| 2-Standard Mast | 5000                 | 3900                         | 6320                                       | —                                            | 195                                    | —                                        | 6                     | 6                     | 600                   |
| 2-Standard Mast | 5500                 | 4200                         | 6870                                       | —                                            | 195                                    | —                                        | 3                     | 6                     | 600                   |
| 2-Standard Mast | 6000                 | 4450                         | 7370                                       | —                                            | 195                                    | —                                        | 3                     | 6                     | 600                   |
| 2-Standard Mast | 6500                 | 4750                         | 7920                                       | —                                            | 195                                    | —                                        | 3                     | 6                     | 600                   |
| 2-Free Mast     | 2300                 | 2500                         | 3747                                       | —                                            | 951                                    | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast     | 2500                 | 2600                         | 3947                                       | —                                            | 1051                                   | —                                        | 6                     | 12                    | 600                   |

| 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) | FORWARD TILT (A, DEG) | BACKWARD TILT (B, MM) | LOAD DISTANCE (X, MM) |
|-------------|----------------------|------------------------------|--------------------------------------------|----------------------------------------------|----------------------------------------|------------------------------------------|-----------------------|-----------------------|-----------------------|
| 2-Free Mast | 2700                 | 2700                         | 4147                                       | —                                            | 1151                                   | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast | 3000                 | 2850                         | 4447                                       | —                                            | 1301                                   | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast | 3300                 | 3000                         | 4747                                       | —                                            | 1451                                   | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast | 3500                 | 3100                         | 4947                                       | —                                            | 1551                                   | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast | 4000                 | 3350                         | 5447                                       | —                                            | 1801                                   | —                                        | 6                     | 12                    | 600                   |
| 2-Free Mast | 4500                 | 3650                         | 5947                                       | —                                            | 2151                                   | —                                        | 6                     | 6                     | 600                   |
| 3-Free Mast | 4500                 | 2950                         | 5950                                       | —                                            | 1535                                   | —                                        | 6                     | 6                     | 600                   |
| 3-Free Mast | 4800                 | 3050                         | 6250                                       | —                                            | 1635                                   | —                                        | 6                     | 6                     | 600                   |
| 3-Free Mast | 5000                 | 3117                         | 6451                                       | —                                            | 1702                                   | —                                        | 6                     | 6                     | 600                   |
| 3-Free Mast | 5500                 | 3283                         | 6949                                       | —                                            | 1868                                   | —                                        | 3                     | 6                     | 600                   |
| 3-Free Mast | 6000                 | 3450                         | 7450                                       | —                                            | 2035                                   | —                                        | 3                     | 6                     | 600                   |
| 3-Free Mast | 6500                 | 3617                         | 7951                                       | —                                            | 2202                                   | —                                        | 3                     | 6                     | 600                   |
| 3-Free Mast | 7000                 | 3783                         | 8449                                       | —                                            | 2368                                   | —                                        | 3                     | 6                     | 600                   |

## Options

| ITEM                       | OPTIONS (optional items marked in yellow)                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fork dimension             | 160*75*1520   Can be customized                                                                                                                                   |
| Fork carriage width option | 2130mm   Yes and can be customized                                                                                                                                |
| Backrest height            | No   Yes and can be customized                                                                                                                                    |
| Front wheel material       | Pneumatic   Normal solid   Non-marking solid                                                                                                                      |
| Rear wheel material        | Pneumatic   Normal solid   Non-marking solid                                                                                                                      |
| Battery capacity           | 309V314AH   309V228AH   309V280AH                                                                                                                                 |
| Charger                    | 309V-65A   309V-100A   309V-130A   309V-200A   309V-260A                                                                                                          |
| Seat type                  | KL01 with armrest   GRAMMER-MSG65                                                                                                                                 |
| Attachments                | forkpositioner with pin type forks   Sideshift and fork positioner – roller-type forks   Sideshift and fork positioner – hook-on type forks (compound hook forks) |

| ITEM                                            | OPTIONS (optional items marked in yellow)                                        |
|-------------------------------------------------|----------------------------------------------------------------------------------|
| Traction pin                                    | Yes and not customized                                                           |
| Warning lamp                                    | LED   rotating warning light   rotating warning light with buzzer                |
| Blue lamp                                       | No   Rear   Front and rear                                                       |
| Area warning lamp                               | No   Both sides   Both sides and rear   Rear                                     |
| Buzzer                                          | Buzzer   English                                                                 |
| OPS system                                      | Yes and not customized                                                           |
| USB interface                                   | USB TYPE A/C                                                                     |
| Telematics                                      | Yes and not customized                                                           |
| Cabin                                           | No   Basic half cabin①   Upgrade half cabin②   Full cabin③   Upgrade full cabin④ |
| Overhead guard                                  | standard                                                                         |
| Turn speed control                              | No   Yes and not customized                                                      |
| Heating system during lithium battery charging  | Yes and not customized                                                           |
| Operator identification device                  | No   Card reader                                                                 |
| Lifting electronic limit                        | No   Yes and not customized                                                      |
| Hydraulic system operating mode                 | Fingertip   Mechanical lever                                                     |
| Rear armrest horn                               | Yes and not customized                                                           |
| Adjustable overspeed alarm                      | No   Yes and not customized                                                      |
| Cigarette lighter socket                        | No   Yes and not customized                                                      |
| Fog light                                       | No   Yes and not customized                                                      |
| Mast working light                              | No   LED*2                                                                       |
| Reversing radar                                 | No   reverse radar   reversing camera   reversing radar + backup camera          |
| Travel deceleration function after mast lifting | No   Yes and not customized                                                      |