



**L<sup>ION</sup> 1.6-2.0 t**

**G2 SERIES LITHIUM BATTERY**

**POWEREDREACH TRUCK**

**(SIT-DOWN TYPE)(80V)(HEAVY DUTY TYPE)**



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# G2 Series 1.6-2.0 t **LIION**



**Driving speed**



**Maximum gradeability  
with load 10%**



**Maximum lifting speed  
with load 0.35m/s**



**Maximum lifting speed  
without load 0.6m/s**



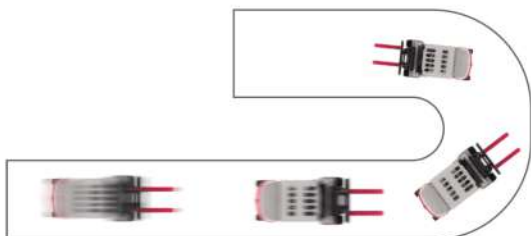
## Full vehicle advantage

High performance guarantee high efficiency

- Lifting speed is increased by 10% and thus more goods can be lifted under the same conditions;
- The truck has fast driving and lifting speed, higher working efficiency;
- ZAPI Dual CPU controller conforming to the latest EU standard is equipped;
- The latest ZAPI instrument can be equipped with height preset function.
- One key to reach the set height improves operation efficiency Small turning radius makes steering flexible and easy

## Intelligent security protection

- **Intelligent stabilization system:** it can automatically adjust the mast and the truck speed according to the lifting height and load state. Improve the high bearing capacity and vehicle stacking safety ;
- **Intelligent speed limit in different application:** multi-scenario identification and intelligent speed limit balance efficiency and safety ;
- **Intelligent limit buffering:** intelligent induction of mast lifting and lowering avoids extreme impact and is safe and comfortable ;
- **Intelligent operation protection :** a full set of OPS system can avoid misoperation and ensure safety ;
- **Intelligent control strategy:** dual core controller is in line with the latest EU safety requirements ; Intelligent steering deceleration : the automatic deceleration function of the turning can reduce the risk of turning over ;



Cornering brake reduction



## Easy operated thumb switch

- To control hydraulic functions.
- Clear operating units.
- Proportional solenoid offering a stable and comfort lowering action

## Advanced EPS electric powered steering

- EPS electric powered steering offering easy, flexible, high efficient and mute operation.
- Steering motor controller.
- Automatic centering function.
- Real-time shifting between 180°steering mode and 360° steering mode.
- Automatic limit on speed and accelerated speed when steering.

## Newly designed hydraulic system

- Newly designed hydraulic system with high working efficiency
- High power lifting motor
- MOSFET lifting speed governing electric controller
- New type low noisy gear pump
- Max. lifting speed without load 15% increased
- Max. lifting speed with load 25% increased

## Ergonomic optimization

- The new design of overhead guard provides a better view.
- Standard handrails make ingress and egress more convenient.
- Larger space for getting on and legs.



## Manufacturer's Data and Design Characteristics

| Character            |                                                            |       |      |                               |              |
|----------------------|------------------------------------------------------------|-------|------|-------------------------------|--------------|
| 1.01                 | Manufacturer                                               |       |      | MINERVA                       |              |
| 1.02                 | Model                                                      |       |      | MHQ16                         | MHQ20        |
| 1.03                 | Configuration number                                       |       |      | GB2SHDLI                      |              |
| 1.04                 | Load capacity                                              | Q     | kg   | 1600                          | 2000         |
| 1.05                 | Load center distance                                       | C     | mm   | 600                           |              |
| 1.06                 | Power mode                                                 |       |      | Lithium Battery               |              |
| 1.07                 | Driving mode                                               |       |      | Seated                        |              |
| 1.08                 | Wheel base                                                 | Y     | mm   | 1450                          | 1670         |
| Tyre                 |                                                            |       |      |                               |              |
| 2.01                 | Tyre type                                                  |       |      | Polyurethane                  |              |
| 2.02                 | Wheels number,drive/load(X=driven wheels)                  |       |      | 1X/2                          |              |
| 2.03                 | Track Width,load                                           | b3    | mm   | 1143                          | 1143         |
| 2.04                 | Wheel size, load                                           |       | mm   | ø330x100                      | ø350x100     |
| 2.05                 | Wheel size, drive                                          |       | mm   | ø343x135                      |              |
| Size                 |                                                            |       |      |                               |              |
| 3.01                 | Lift height                                                | h3    | mm   | 6300                          | 8500         |
| 3.02                 | Free lift                                                  | h2    | mm   | 1840                          | 2611         |
| 3.03                 | Mast height, lowered                                       | h1    | mm   | 2881                          | 3634         |
| 3.04                 | Fork size, thickness x width x length                      | s/e/l | mm   | 40x122x1150                   |              |
| 3.05                 | Fork adjusting width                                       |       | mm   | 244~724                       |              |
| 3.06                 | Fork tilt angle (front/rear)                               | α/β   | °    | 2/4                           |              |
| 3.07                 | Fork sideshifting                                          |       |      | ±75                           |              |
| 3.08                 | Truck body length(fork excluded)                           | L     | mm   | 1872                          | 2096         |
| 3.09                 | Truck body width                                           | b1    | mm   | 1270                          |              |
| 3.10                 | Distance between support arms                              | b2    | mm   | 900                           |              |
| 3.11                 | Reach distance                                             | l4    | mm   | 575/545                       | 620          |
| 3.12                 | Height of overhead guard                                   | h4    | mm   | 2215                          |              |
| 3.13                 | Ground clearance,below mast                                | m2    | mm   | 75                            |              |
| 3.14                 | Turning radius                                             | Wa    | mm   | 1689                          | 1901         |
| 3.15                 | Load distance,centre of support arm wheel to face of forks | X     | mm   | 370/340                       | 381          |
| 3.16                 | Aisle width with pallet 1100Lx1100W,clearance 200          | Ast   | mm   | 2915                          | 2960         |
| 3.17                 | Aisle width with pallet 1000Lx1100W,clearance 200          | Ast   | mm   | 2760                          | 3010         |
| Performance          |                                                            |       |      |                               |              |
| 4.01                 | Travelling speed,with/without load                         |       | km/h | 13/14                         | 13/14        |
| 4.02                 | Lifting speed,with/without load                            |       | m/s  | 0.48/0.7                      | 0.35/0.55    |
| 4.03                 | Lowering speed,with/without load                           |       | m/s  | 0.55/0.5                      | 0.5/0.5      |
| 4.04                 | Reach speed,with/without load                              |       | m/s  | 0.19/0.19                     | 0.1/0.1      |
| 4.05                 | Maximum climbing ability,with/without load(S2-5min)        |       | %    | 10/15                         | 10/15        |
| Weight               |                                                            |       |      |                               |              |
| 5.01                 | Total weight (with battery)                                |       |      | 3825                          | 4695         |
| 5.02                 | Axle unload, mast outreached, without load, drive/load     |       |      | 1705/2120                     | 1960/2735    |
| 5.03                 | Axle unload, mast reached, without load, drive/load        |       |      | 2330/1495                     | 2800/1895    |
| 5.04                 | Axle load, mast outreached, with load, drive/load          |       |      | 825/4600                      | 935/5760     |
| 5.05                 | Axle load, mast reached, with load, fdrive/load            |       |      | 2045/3380                     | 2575/4120    |
| Battery              |                                                            |       |      |                               |              |
| 6.01                 | Battery voltage/capacity                                   |       | V/Ah | 80/202                        | 80/202       |
| 6.02                 | Battery weight                                             |       | kg   | 570                           | 1000         |
| 6.03                 | Battery box dimension                                      |       | mm   | 1220x298x749                  | 1220x427x784 |
| Moter and controller |                                                            |       |      |                               |              |
| 7.01                 | Drive moter power(S2-60min)                                |       | kw   | 8                             |              |
| 7.02                 | Lifting moter power(S3-15%)                                |       | kw   | 15.5                          |              |
| 7.03                 | Steering moter power(S3-15%)                               |       | kw   | 0.8                           |              |
| 7.04                 | Type of control                                            |       |      | MOSFET/AC                     |              |
| 7.05                 | Transmission box                                           |       |      | HELI special transmission box |              |
| 7.06                 | Service brake                                              |       |      | Electrical                    |              |

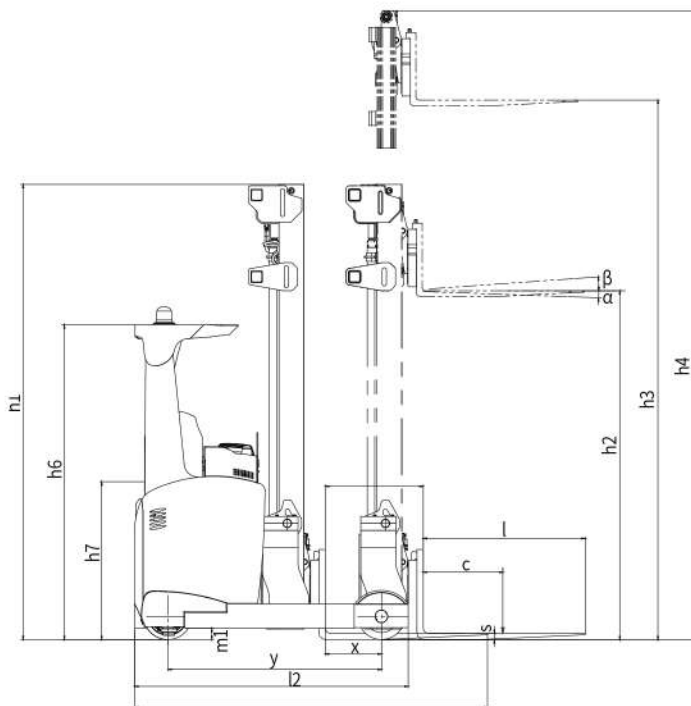
NOTE: \*Detailed information about battery, please contact our salesmen or engineer.

### 1.6t WIDE VIEW FULL FREE 3-STAGE MAST

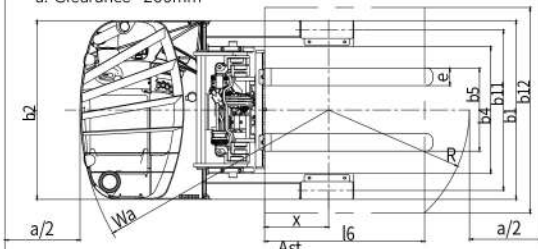
| Mast model | Max.lifting height (mm) | Load capacity (load center 600mm)(kg) | Height (mast lowered)(mm) | Free lift (with backrest) (mm) | Service weight (kg) | Forktilt angle $\alpha/\beta$ (°) |
|------------|-------------------------|---------------------------------------|---------------------------|--------------------------------|---------------------|-----------------------------------|
|            |                         | MHQ16-GB2SHDLI                        | MHQ16-GB2SHDLI            | MHQ16-GB2SHDLI                 | MHQ16-GB2SHDLI      |                                   |
| ZSM630     | 6300                    | 1600                                  | 2881                      | 1840                           | 3825                | 2°/4°                             |
| ZSM675     | 6750                    | 1600                                  | 2982                      | 1940                           | 3855                | 2°/4°                             |
| ZSM700     | 7000                    | 1600                                  | 3065                      | 2030                           | 3880                | 2°/4°                             |
| ZSM750     | 7500                    | 1500                                  | 3232                      | 2190                           | 3930                | 2°/4°                             |
| ZSM800     | 8000                    | 1450                                  | 3398                      | 2360                           | 3975                | 2°/4°                             |
| ZSM850     | 8500                    | 1400                                  | 3564                      | 2530                           | 4025                | 2°/4°                             |
| ZSM900     | 9000                    | 1300                                  | 3801                      | 2778                           | 4235                | 2°/4°                             |
| ZSM950     | 9500                    | 1200                                  | 3967                      | 2944                           | 4320                | 2°/4°                             |
| ZSM1000    | 10000                   | 1100                                  | 4134                      | 3111                           | 4375                | 2°/4°                             |
| ZSM1050    | 10500                   | 1000                                  | 4301                      | 3278                           | 4435                | 2°/4°                             |
| ZSM1080    | 10800                   | 950                                   | 4401                      | 3378                           | 4470                | 2°/4°                             |
| ZSM1100    | 11000                   | 900                                   | 4467                      | 3444                           | 4490                | 2°/4°                             |

### 2t WIDE VIEW FULL FREE 3-STAGE MAST

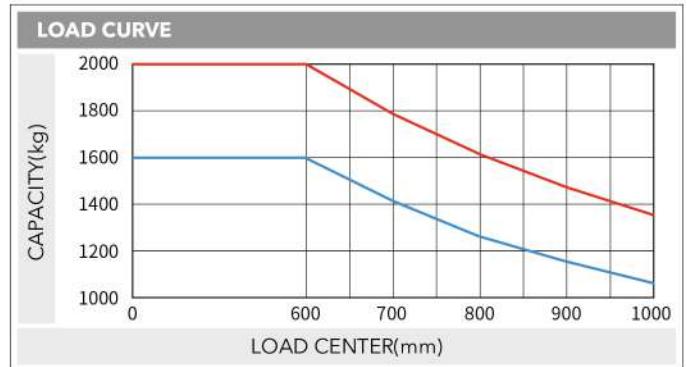
| Mast model | Max.lifting height (mm) | Load capacity (load center 600mm)(kg) | Height (mast lowered)(mm) | Free lift (with backrest) (mm) | Service weight (kg) | Forktilt angle $\alpha/\beta$ (°) |
|------------|-------------------------|---------------------------------------|---------------------------|--------------------------------|---------------------|-----------------------------------|
|            |                         | MHQ20-GB2SHDLI                        | MHQ20-GB2SHDLI            | MHQ20-GB2SHDLI                 | MHQ20-GB2SHDLI      |                                   |
| ZSM850     | 8500                    | 2000                                  | 3634                      | 2611                           | 4695                | 2°/4°                             |
| ZSM900     | 9000                    | 1900                                  | 3801                      | 2778                           | 4745                | 2°/4°                             |
| ZSM950     | 9500                    | 1800                                  | 3967                      | 2944                           | 4795                | 2°/4°                             |
| ZSM1000    | 10000                   | 1650                                  | 4134                      | 3111                           | 4845                | 2°/4°                             |
| ZSM1050    | 10500                   | 1450                                  | 4301                      | 3278                           | 4895                | 2°/4°                             |
| ZSM1080    | 10800                   | 1350                                  | 4401                      | 3378                           | 4925                | 2°/4°                             |
| ZSM1100    | 11000                   | 1250                                  | 4467                      | 3444                           | 4950                | 2°/4°                             |
| ZSM1150    | 11500                   | 1150                                  | 4634                      | 3611                           | 5000                | 2°/4°                             |
| ZSM1200    | 12000                   | 1000                                  | 4801                      | 3778                           | 5050                | 2°/4°                             |
| ZSM1250    | 12500                   | 800                                   | 4967                      | 3944                           | 5100                | 2°/4°                             |



Ast: Right angle stacking aisle width  
a: Clearance 200mm



1.6 t 2.0 t



Note: The vertical axis stands for load capacity and the horizontal axis stands for load center which is calculated from the front surface of the forks to the gravity of the standard load. the standard load means a cubic with 1200mm edge length. When mast is tilted forward, using non-standard forks or loading large goods, the load capacity will be reduced. The load capacity of standard mast at different load center can be known from this load chart.



RENEWABLE ENERGY TECHNOLOGIES

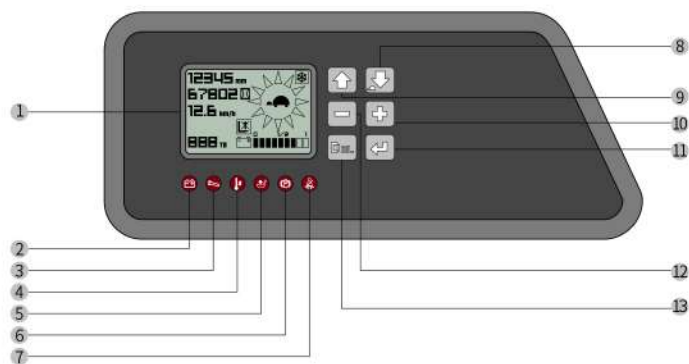
With the use of the excellent load-sensing steering system and AC controlling renewable energy technologies, the forklift is more energy-saving and the working hour of the battery is extended by 15%.



15%

## Reliable special designed instrument

The reliable special instrument gives a complete display of the vital information, like operation status, fault detection, etc. It ensures the operator predominate the vehicle status more intuitive and convenient.



- |                                          |                                       |
|------------------------------------------|---------------------------------------|
| 1 Information display                    | 8 Performance selecting button (down) |
| 2 Low voltage indicator                  | 9 Performance selecting button (up)   |
| 3 Fault indicator                        | 10 Value setting button (increase)    |
| 4 Oil temperature indicator (spare use)  | 11 Enter                              |
| 5 Foot pedal safety switch indicator     | 12 Value setting button (decrease)    |
| 6 Electric brake indicator               | 13 Exit                               |
| 7 Seat belt switch indicator (spare use) |                                       |



- |                         |                                        |                  |
|-------------------------|----------------------------------------|------------------|
| 1 Fault indicator       | 8 Steering angle indicator             | 15 Enter         |
| 2 Brake indicator       | 9 Hour meter                           | 16 Exit          |
| 3 Seat switch indicator | 10 Front and rear gears indicator      | 17 Battery level |
| 4 Date and time         | 11 Performance selecting button (down) |                  |
| 5 Working mode          | 12 Performance selecting button (up)   |                  |
| 6 Speed display         | 13 Value setting button (increase)     |                  |
| 7 Truck speed           | 14 Value setting button (decrease)     |                  |

## Standard configuration

|                                                |                              |
|------------------------------------------------|------------------------------|
| AC travelling motor                            | Integral sideshifter         |
| AC Lifting motor                               | Polyurethane tyre            |
| AC steering motor                              | Front working light          |
| Electrical brake                               | Rearview mirror              |
| DC/DC converter                                | Monitoring system*           |
| Low noisy gear pump                            | Lifting height pre-selector* |
| Control valve(four throw)                      | Fork tilting                 |
| 6300mm Three-stage full free lift mast (CQD16) | Backward buzzer              |
| 8500mm Three-stage full free lift mast (CQD20) | HELI package                 |
| Standard fork                                  |                              |

NOTE: Optional configuration for CQD16-GB2SHDLI marked with "\*\*\*"

## Optional

Three-stage full free lift mast(other lifting height)  
Fork with other length  
Fork extension  
Rear working light  
Fan  
Fire extinguisher  
Truck networking  
Other lithium battery  
Alternative colour schemes

## HELI smart fleet management system (optional)

- Vehicle positioning
- Remote diagnosis
- Remote monitoring
- Maintenance reminder
- Battery management
- Statistical form
- Vehicle management
- Identification recognition (optional)
- Weight management (optional)
- Collision management (optional)



## Charger technology



- > Charging efficiency higher than 95% meeting the requirements of energy saving and emissions reduction.
- > 100% charging realized in 2 hours at the soonest.
- > 48V/80V compatibility meeting the demand of different voltage levels.
- > Built-in mis-connecting protection offering self isolating function under fault; Perfect fault self checking alarm facilitating users maintenance.

# MINERVA ELECTRON FORKLIFT

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