



FM-4W 20

FM-4W 25

## FM-4W Technical Data

4-way reach truck



This specification sheet to VDI Guidelines 2198 only gives the technical figures for the standard truck.  
Different tyres, masts, additional equipment etc. could give different figures.

|                  |   |  |                                  |                | STILL                | STILL                |           |
|------------------|---|--|----------------------------------|----------------|----------------------|----------------------|-----------|
| Characteristics  | 1.1   | Manufacturer   |                                  |                |                      |                      |           |
|                  | 1.2   | Manufacturer's model designation                     |                                  |                | FM-4W 20             | FM-4W 25             |           |
|                  | 1.3   | Drive (electric, diesel, petrol, LPG)                |                                  |                | Electric             | Electric             |           |
|                  | 1.4   | Operation (hand, pedestrian, stand on, rider seated) |                                  |                | Rider seated         | Rider seated         |           |
|                  | 1.5   | Capacity/load  | Q                                | kg             | 2000                 | 2500                 |           |
|                  | 1.6   | Load centre  | c                                | mm             | 600                  | 600                  |           |
|                  | 1.8   | Load distance  | x                                | mm             | 470*                 | 533*                 |           |
| 1.9              | Wheel base  | y  | mm                               | 1500           | 1660                 |                      |           |
| Weights          | 2.1   | Truck weight   |                                  | kg             | 4400                 | 4800                 |           |
|                  | 2.3   | Axle load  | Driver/Driver at load end        | kg             | 2550/2350            | 2550/2350            |           |
|                  | 2.4   | Axle load forks forward                              | Driver/Driver at load end        | kg             | 750/5650             | 950/6350             |           |
|                  | 2.5   | Axle load forks back                                 | Driver/Driver at load end        | kg             | 2350/4050            | 2350/4950            |           |
|                  | 3.1   | Tyres (rubber, polyurethane, pneumatic)              |                                  |                | Polyurethane         | Polyurethane         |           |
| Wheels   chassis | 3.2   | Tyre size, driver's end                              |                                  | mm             | ø 350 x 140          | ø 350 x 140          |           |
|                  | 3.3   | Tyre size, load end, load wheel/swivel castor        |                                  | mm             | ø 285 x 110/260 x 85 | ø 285 x 110/260 x 85 |           |
|                  | 3.5   | Number of wheels (x=driven) Load end/driver's end    |                                  |                | 1x /4                | 1x /4                |           |
|                  | 3.6   | Track width, driver's end                            | b <sub>10</sub>                  | mm             | 0                    | 0                    |           |
|                  | 3.7   | Track width, Load end                                | b <sub>11</sub>                  | mm             | 1470                 | 1470                 |           |
|                  | Basic dimensions                                      | 4.1  | Mast/carriage tilt, forward/back |                | °                    | 1/3 (1/1)            | 1/3 (1/1) |
|                  |   | 4.2  | Height, mast lowered             | h <sub>1</sub> | mm                   | See table            | See table |
| 4.3              |   | Free lift  | h <sub>1</sub>                   | mm             | h <sub>1</sub> -717  | h <sub>1</sub> -717  |           |
| 4.4              |   | Lift   | h <sub>3</sub>                   | mm             | See table            | See table            |           |
| 4.5              |   | Height, mast raised                                  | h <sub>4</sub>                   | mm             | See table            | See table            |           |
| 4.7              |   | Height over overhead guard (cab)                     | h <sub>6</sub>                   | mm             | 2155                 | 2155                 |           |
| 4.8              |   | Seat height/platform height                          | h <sub>7</sub>                   | mm             | 1050/1120            | 1050/1120            |           |
| 4.10             |   | Height of straddle arms or load wheels               | h <sub>8</sub>                   | mm             | 420                  | 420                  |           |
| 4.19             |   | Overall length                                       | l <sub>1</sub>                   | mm             | 2451*                | 2548*                |           |
| 4.20             |   | Length including fork backs                          | l <sub>2</sub>                   | mm             | 1301                 | 1398*                |           |
| 4.21             |   | Overall width  | b <sub>1</sub> /b <sub>2</sub>   | mm             | 1765/1260            | 1765/1260            |           |
| 4.22             |   | Fork dimensions                                      | s/e/l                            | mm             | 45/125/1150          | 45/125/1150          |           |
| 4.24             |   | Fork carriage width                                  | b <sub>3</sub>                   | mm             | 1500                 | 1500                 |           |
| 4.25             |   | Fork adjustment                                      | min/max                          | mm             | 556/1546 (556/2216)  | 556/1546 (556/2216)  |           |
| 4.26             |   | Width between straddle arms/load surfaces            | b <sub>4</sub>                   | mm             | 924                  | 924                  |           |
| 4.28             |   | Reach  | l <sub>4</sub>                   | mm             | 750*                 | 813*                 |           |
| 4.32             |   | Floor clearance, centre of wheel-base                | m <sub>2</sub>                   | mm             | 47                   | 47                   |           |
| 4.33             | Working aisle width with 1000 x 1200 pallet crossways | A <sub>st</sub>                                      | mm                               | 2769*          | 2895*                |                      |           |
| 4.34             | Working aisle width with 800 x 1200 pallet lengthways | A <sub>st</sub>                                      | mm                               | 2797           | 2913*                |                      |           |
| 4.35             | Turning radius  | W <sub>a</sub>                                       | mm                               | 1778           | 1935                 |                      |           |
| 4.37             | Length over straddle arms                             | l <sub>7</sub>                                       | mm                               | 1977           | 2137                 |                      |           |
| Performance      | 5.1   | Travel speed   | laden/unladen                    | km/h           | 13.2/14.0            | 13.2/14.0            |           |
|                  | 5.2   | Hoist speed  | laden/unladen                    | m/s            | 0.44/0.51            | 0.44/0.51            |           |
|                  | 5.3   | Lowering speed                                       | laden/unladen                    | m/s            | 0.55/0.55            | 0.55/0.55            |           |
|                  | 5.4   | Reach speed  | laden/unladen                    | m/s            | 0.2/0.2              | 0.2/0.2              |           |
|                  | 5.8   | Max. gradeability                                    | laden/unladen                    | %              | 7.2/10.6             | 6.1/9.6              |           |
|                  | 5.10  | Service brake  |                                  |                | generator/hyd.-mech. | generator/hyd.-mech. |           |
| Motor            | 6.1   | Drive motor, rating S2 = 60 min                      |                                  | kW             | 7.5                  | 7.5                  |           |
|                  | 6.2   | Hoist motor, rating at S3 = 15%                      |                                  | kW             | 14                   | 14                   |           |
|                  | 6.3   | Battery to IEC 254-2; A, B, C, No                    |                                  |                | IEC 254-2, C         | IEC 254-2, C         |           |
|                  | 6.4   | Battery voltage, rated capacity C <sub>5</sub>       |                                  | V/Ah           | 48/420-930*          | 48/500-930*          |           |
|                  | 6.5   | Battery weight ±5% (depends on make)                 |                                  | kg             | 750-1306*            | 939-1306*            |           |
| Misc             | 8.1   | Drive controller                                     |                                  |                | Transistor           | Transistor           |           |
|                  | 8.2   | Working pressure for attachments                     |                                  | bar            | 210                  | 210                  |           |
|                  | 8.4   | Sound level at driver's ear                          |                                  | dB (A)         | 70                   | 70                   |           |

### FM-4W 20 Mast table

| h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | Residual Q kg* |
|----------------|----------------|----------------|----------------|----------------|
| 2140           | 1423           | 4350           | 5060           | 2000           |
| 2340           | 1623           | 4950           | 5660           | 2000           |
| 2440           | 1723           | 5250           | 5960           | 1950           |
| 2640           | 1923           | 5850           | 6560           | 1850           |
| 2790           | 2073           | 6300           | 7010           | 1750           |
| 2957           | 2240           | 6800           | 7510           | 1700           |
| 3190           | 2473           | 7500           | 8210           | 1550           |
| 3357           | 2640           | 8000           | 8710           | 1500           |
| 3523           | 2806           | 8500           | 9210           | 1400           |

### FM-4W 25 Mast table

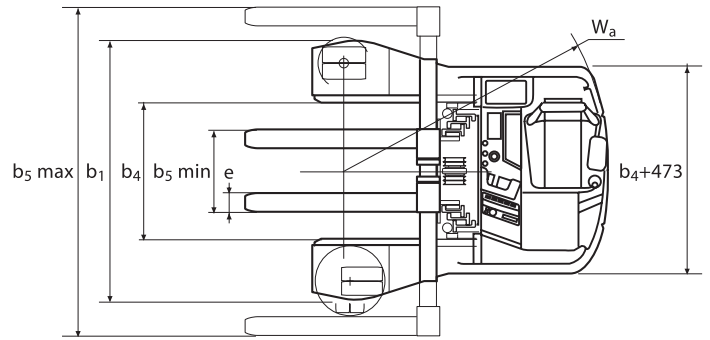
| h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>4</sub> | Residual Q kg*<br>for fork adjustment<br>560-1550 mm | Residual Q kg*<br>for fork adjustment<br>560-2220 mm |
|----------------|----------------|----------------|----------------|--|--|
| 2340           | 1623           | 4500           | 5210           | 2400   | 2300   |
| 2440           | 1723           | 4800           | 5510           | 2350   | 2300   |
| 2640           | 1923           | 5400           | 6110           | 2200   | 2200   |
| 2957           | 2240           | 6350           | 7060           | 1900   | 1900   |
| 3190           | 2473           | 7050           | 7760           | 1700   | 1700   |
| 3357           | 2640           | 7550           | 8260           | 1600   | 1600   |
| 3523           | 2806           | 8050           | 8760           | 1500   | 1500   |
| 3673           | 2956           | 8500           | 9210           | 1450   | 1450   |
| 3840           | 3123           | 9000           | 9710           | 1350   | 1350   |

\* depends on battery size

## Residual capacities/Load centre\*

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$h_3 = 4350$  mm



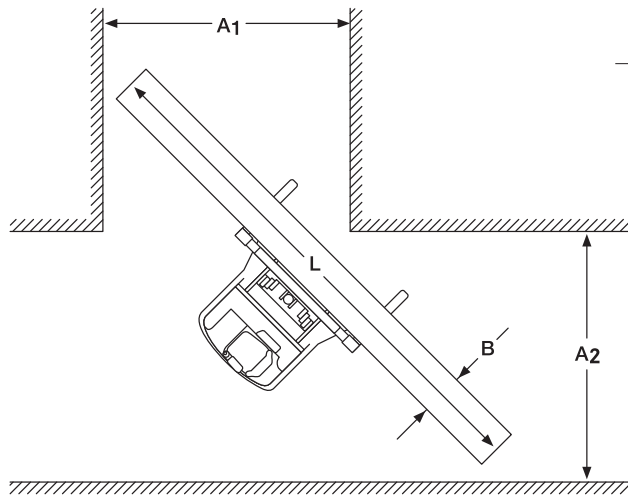
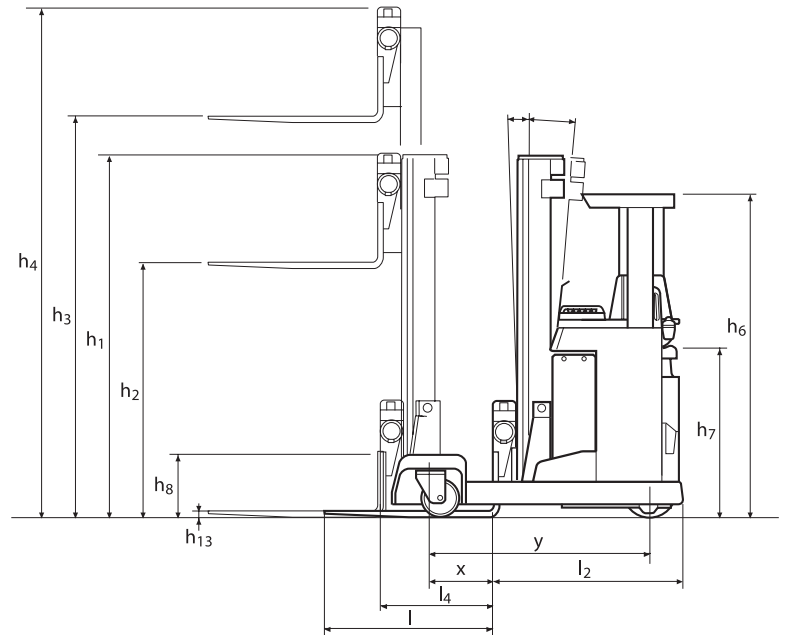
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$h_3 = 4500$  mm (Fork adjustment 560-2220 mm)

| Residual Q | Load centre |        |        |
|------------|-------------|--------|--------|
|            | 400 mm      | 500 mm | 600 mm |
| 2500 kg    |             |        |        |
| 2400 kg    |             |        |        |
| 2300 kg    | o           | o      | o      |
| 2200 kg    |             |        |        |
| 2100 kg    |             |        |        |
| 2000 kg    |             |        |        |

$h_3 = 4500$  mm (Fork adjustment 560-1550 mm)

| Residual Q | Load centre |        |        |
|------------|-------------|--------|--------|
|            | 400 mm      | 500 mm | 600 mm |
| 2500 kg    | o           | o      |        |
| 2400 kg    |             |        | o      |
| 2300 kg    |             |        |        |
| 2200 kg    |             |        |        |
| 2100 kg    |             |        |        |
| 2000 kg    |             |        |        |



### FM-4W 20 Aisle width

| Aisle $A_1$ mm* | Main aisle $A_2$ mm* |      |      |
|-----------------|----------------------|------|------|
|                 | Load length L        |      |      |
|                 | 4 m                  | 6 m  | 8 m  |
| 3000            | 2930                 | 3690 | 5250 |
| 3200            | 2930                 | 3480 | 4990 |
| 3400            | 2930                 | 2930 | 4750 |
| 3600            | 2930                 | 2930 | 4510 |
| 3800            | 2930                 | 2930 | 4300 |
| 4000            | 2930                 | 2930 | 4090 |
| 4200            | 2930                 | 2930 | 3890 |
| 4400            | 2930                 | 2930 | 3700 |
| 4600            | 2930                 | 2930 | 3530 |
| 4800            | 2930                 | 2930 | 3360 |
| 5000            | 2930                 | 2930 | 2930 |
| 5200            | 2930                 | 2930 | 2930 |
| 5400            | 2930                 | 2930 | 2930 |

B = 1150 mm  
Safety distance = 400 mm

### FM-4W 25 Aisle width

| Aisle $A_1$ mm* | Main aisle $A_2$ mm* |      |      |
|-----------------|----------------------|------|------|
|                 | Load length L        |      |      |
|                 | 4 m                  | 6 m  | 8 m  |
| 3000            | 2950                 | 3690 | 5250 |
| 3200            | 2950                 | 3490 | 4990 |
| 3400            | 2950                 | 2950 | 4750 |
| 3600            | 2950                 | 2950 | 4510 |
| 3800            | 2950                 | 2950 | 4300 |
| 4000            | 2950                 | 2950 | 4090 |
| 4200            | 2950                 | 2950 | 3890 |
| 4400            | 2950                 | 2950 | 3700 |
| 4600            | 2950                 | 2950 | 3530 |
| 4800            | 2950                 | 2950 | 3360 |
| 5000            | 2950                 | 2950 | 2950 |
| 5200            | 2950                 | 2950 | 2950 |
| 5400            | 2950                 | 2950 | 2950 |

B = 1150 mm  
Safety distance = 400 mm

\* depends on battery size

## Standard equipment

The FM-4W four-way reach truck is a universal unit, which is especially suitable for transporting long products and putting them into stock, as well as normal pallets and containers. Thanks to its four-way design it allows the economical utilisation of storage space with minimal working aisle widths.

## Driver's compartment

- Adjustable steering wheel position with fore and aft seat adjustment allows a comfortable working position.
- Comfort seat features hydraulic damping adjustable to the driver's body weight as well as a tilt function (up to 15°). Seat contour shaped to give plenty of untiring support. For added safety the truck can only be driven if the foot switch is depressed.
- The clear view mast with good all round visibility and optimised view through the overhead guard give the driver a very clear optimum overview.
- Control is through four ergonomic levers.
- Comfortable, upholstered arm rest provides supports whilst operating the truck.
- A display panel for the active operating states and service information shows: ready state, driving direction, position of the steered load wheel, parking brake status, steering status, inching, operating hours, battery state of charge.
- The FM-4W has four drive categories for the driver to choose from in order to control the truck's acceleration, deceleration, plugging and travel speed.
- Adjustable height operating panel for improved ergonomics.
- Various storage facilities for documents, etc.

## Electric steering

- The steering wheel has fully electric actuation, i. e. no high-maintenance mechanical link with the steer motor.
- Reduced energy consumption due to the steering electronics only being activated when the steering wheel is moved.
- Minimal movement forces give precise, light and easy steering.
- High turnround of goods and driving comfort due to 360° unlimited steering.
- Steering wheel adjustable for height, rake and length for improved ergonomics.
- Change of drive direction through 90°. For diagonal travel the load wheel can be positioned smoothly.

## Mast

- Triplex clear view mast with mast tilt and free lift as standard for utilisation of space right up to the roof.
- The nested I-beam section mast with integral hoist cylinders and hoist chains running behind them gives a very clear view.
- Manual or optional hydraulic fork adjustment up to 2250 mm.

## Hydraulics

The proportional control valve fitted as standard allows particularly sensitive movements.

- Operating speeds for lifting, lowering and reach.
- Stepless control of movements improves safety of operation.
- Powerful three-phase drives.

## Drive unit

The truck will start smoothly and accelerate smoothly to maximum speed.

- The three-phase motor does not rotate when steering, preventing stressed cable connections.
- Monitoring equipment avoids defects and makes it possible to plan for down time.
- Integral current and temperature sensors.
- Malfunction monitoring.
- Highly efficient energy use thanks to the spur bevel gear transmission.

## Brake

The brake system consists of an electromagnetic and a hydraulic brake. The electromagnetic disc brake acts on the motor shaft and serves as a parking brake, while the hydraulic brake acts on the load wheel.

## Central control

- The design of the circuitry and controller (in conjunction with CAN bus technology) provides a very high standard of safety.
- All speeds can be programmed: Main hoist lift/lower, travel speed forwards/reverse, acceleration and deceleration, inching speed, mast reach, mast tilt and mast side-shift, plus the ramp functions when reaching forwards and backwards.
- Connection of diagnostic system through an easily accessible central diagnostic plug.

## Battery

- Battery extracted using mast reach.
- For multi-shift use, the battery can be changed using a hoist or an optional battery roller track.

## Safety

The truck is built in compliance with the EC guideline 98/37/EC and carries the CE Symbol. STILL is certified to ISO 9001.

|                      |  |       |
|----------------------|--|-------|
|                      | Manufacturer   | STILL |
|                      | Manufacturer's model designation   | FM-4W |
| Driver's compartment | Driver's seat with longitudinal adjustment                                 | ●     |
|                      | Comfortable seat with hydraulic damping                                    | ●     |
|                      | Tilting seat, inclination 15 °   | ●     |
|                      | Tilting head rest  | ○     |
|                      | Driver's seat with heater  | ○     |
|                      | Head cushion on overhead guard leg   | ●     |
|                      | Display: active operating states and service instructions                  | ●     |
|                      | Four driving profiles selectable by driver                                 | ●     |
| Steering             | Full electric steering 360 °   | ●     |
|                      | Control unit adjustable for height, inclination and length                 | ●     |
|                      | Mini-steering wheel with adjustable height arm rests                       | ○     |
|                      | Direct spline mounted steer motor (maintenance free)                       | ●     |
|                      | Drive wheel, steered   | ●     |
|                      | Load wheel reversible and smoothly positioned                              | ●     |
| Mast                 | Triplex clearview mast with free lift                                      | ●     |
|                      | Mast transition damping  | ●     |
| Fork carriage        | Manual fork adjustment with mast tilt, adjustment range 560 - 1550 mm      | ●     |
|                      | Manual fork adjustment, Adjustment range 560 - 2220 mm                     | ○     |
|                      | Hydraulic fork adjustment, Adjustment range 560 - 1550 mm                  | ○     |
|                      | Hydraulic fork adjustment, Adjustment range 560 - 2220 mm                  | ○     |
|                      | Creep speed with fork carriage raised                                      | ○     |
|                      | Fork extensions  | ○     |
| Hydraulics           | Operation through four single levers                                       | ●     |
|                      | Operation through joystick   | ○     |
|                      | Noise optimised hydraulic pump   | ○     |
|                      | Auxiliary hydraulics   | ○     |
|                      | Proportional valve technology for particularly sensitive movements         | ●     |
| Drive                | Separate parameter setting option for the hydraulic functions              | ●     |
|                      | Three phase drives   | ●     |
|                      | Best energy utilisation thanks to spur bevel gear transmission             | ●     |
| Brake                | Treaded drive wheel  | ○     |
|                      | Hydraulic load wheel brake   | ●     |
|                      | Electromagnetic disc brake as a service and parking brake                  | ●     |
| Central controller   |  |       |
|                      | CAN bus Technology   | ●     |
|                      | Programming facilities for the drive, acceleration and retardation figures | ●     |
| Battery              | Central Service and Diagnostics interface                                  | ●     |
|                      |  |       |
|                      | Battery extracted using mast reach   | ●     |
|                      | Battery changing using hoist   | ●     |
| Additional equipment | Battery chaging to side using roller track                                 | ○     |
|                      | Weather protection cab   | ○     |
|                      | Cold store version   | ○     |
|                      | Writing surface  | ○     |
|                      | Preparation for data terminal  | ○     |
|                      | Load indicator with height indicator                                       | ○     |
|                      | Working spotlight  | ○     |
|                      | Warning lamps  | ○     |
|                      | Intermediate hoist limiters  | ○     |
|                      | Height indicator   | ○     |
|                      | Card reader for access authorisation                                       | ○     |
|                      | Radio with CD/MP3-Player   | ○     |

● Standard      ○ Option



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STILL is certified in the following areas: Quality management, occupational safety, environmental protection and energy management.



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