

FM-X SE Technical Data

Driver Seated Reach Truck with Super Elastic Tyres

FM-X 14 SE/Li-Ion

FM-X 17 SE/Li-Ion

FM-X 20 SE/Li-Ion



FM-X SE Driver Seated Reach Truck with Super Elastic Tyres

This specification sheet, which conforms to VDI guideline 2198, provides the technical values for the standard equipment only. Different tyres, other masts, the use of accessories, etc., may result in other values.



| | | | STILL | STILL | STILL | | | |
|----------------------|------------------|--|--------------------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|
| | | | FM-X 14 SE/Li-Ion | FM-X 17 SE/Li-Ion | FM-X 20 SE/Li-Ion | | | |
| Distinguishing marks | 1.1 | Manufacturer | | | | | | |
| | 1.2 | Manufacturer's type designation | | | | | | |
| | 1.3 | Drive | | Electric | Electric | | | |
| | 1.4 | Operator type | | Seated | Seated | | | |
| | 1.5 | Rated capacity/rated load | Q | kg | 1400 | 1700 | 2000 | |
| | 1.6 | Load capacity at load centre distance | c | mm | 600 | 600 | 600 | |
| | 1.8 | Load centre distance ¹ | x | mm | 238 | 238 | 388 | |
| | 1.9 | Wheel base | y | mm | 1380 | 1380 | 1530 | |
| | 2.1 | Service weight (incl. battery) | | kg | 3750 | 3750 | 3690 | |
| Weights | 2.3 | Axle loading, unladen | drive end/load end | kg | 2230/1520 | 2230/1520 | 2330/1360 | |
| | 2.4 | Axle loading, fork advanced, laden | drive end/load end | kg | 920/4230 | 730/4720 | 690/5000 | |
| | 2.5 | Axle loading, fork retracted, laden | drive end/load end | kg | 1870/3280 | 1790/3660 | 2060/3630 | |
| Tyres/chassis | 3.1 | Tyres | | | Cushion/ Super Elastic | Cushion/ Super Elastic | Cushion/ Super Elastic | |
| | 3.2 | Tyre size | drive end | mm | ∅ 457 x 203 | ∅ 457 x 203 | ∅ 457 x 203 | |
| | 3.3 | Tyre size | load end | mm | ∅ 454 x 160 | ∅ 454 x 160 | ∅ 450 x 195 | |
| | 3.5 | Number of wheels (x = driven) | drive end/load end | | 1x/2 | 1x/2 | 1x/2 | |
| | 3.7 | Tread | load end | b ₁₁ | mm | 1210 | 1210 | 1256 |
| Dimensions | 4.1 | Tilt of mast/fork carriage ² | forward/backward | α/β | ° | 2/4 | 2/4 | 1/3 |
| | 4.2 | Height | mast lowered | h ₁ | mm | 2275 | 2275 | 2275 |
| | 4.3 | Free lift | | h ₂ | mm | 1640 | 1640 | 1630 |
| | 4.4 | Lift | | h ₃ | mm | 5000 | 5000 | 4830 |
| | 4.5 | Height | mast extended | h ₄ | mm | 5635 | 5635 | 5475 |
| | 4.7 | Height of overhead guard ³ | | h ₆ | mm | 2324 | 2324 | 2324 |
| | 4.8 | Seat height | | h ₇ | mm | 1264 | 1264 | 1264 |
| | 4.10 | Height of wheel arms | | h ₈ | mm | 473 | 473 | 473 |
| | 4.19 | Overall length ^{2,4,5} | | l ₁ | mm | 2600 | 2600 | 2605 |
| | 4.20 | Length to face of forks ^{2,4,5} | | l ₂ | mm | 1450 | 1450 | 1455 |
| | 4.21 | Overall width | | b ₁ /b ₂ | mm | 1378/1270 | 1378/1270 | 1458/1270 |
| | 4.22 | Fork dimensions | DIN ISO 2331 | s/e/l | mm | 40/100/1150 | 40/100/1150 | 40/100/1150 |
| | 4.23 | Fork carriage ISO 2328, class/type A, B | | | | 2/B | 2/B | 2/B |
| | 4.24 | Fork carriage width | | b ₃ | mm | 760 | 760 | 760 |
| | 4.25 | Distance between fork arms | min./max. | b ₅ | mm | 316/620 | 316/620 | 316/620 |
| | 4.26 | Distance between wheel arms/loading surfaces | | b ₄ | mm | 920 | 920 | 920 |
| | 4.28 | Reach distance ¹ | | l ₄ | mm | 501 | 501 | 651 |
| | 4.31 | Ground clearance, laden, below mast | | m ₁ | mm | 144 | 144 | 144 |
| | 4.32 | Ground clearance, centre of wheel base | | m ₂ | mm | 144 | 144 | 144 |
| | 4.34.1 | Aisle width for pallets 1000 x 1200 crossways ² | | A _{st} | mm | 2861 | 2861 | 2896 |
| | 4.34.2 | Aisle width for pallets 800 x 1200 lengthways ² | | A _{st} | mm | 2933 | 2933 | 2944 |
| | 4.35 | Turning radius | | W _g | mm | 1691 | 1691 | 1838 |
| | 4.37 | Length across wheel arms | | l ₇ | mm | 1920 | 1920 | 2070 |
| | 4.43 | Step height | | | mm | 258 | 258 | 258 |
| | Performance data | 5.1 | Travel speed | laden/unladen | km/h | 14/14 | 14/14 | 14/14 |
| | | 5.1.1 | Travel speed, backwards | laden/unladen | km/h | 14/14 | 14/14 | 14/14 |
| | | 5.2 | Lift speed | laden/unladen | m/s | 0.45/0.68 | 0.45/0.68 | 0.37/0.58 |
| 5.3 | | Lowering speed | laden/unladen | m/s | 0.56/0.52 | 0.56/0.52 | 0.53/0.50 | |
| 5.4 | | Reaching speed | laden/unladen | m/s | 0.18/0.18 | 0.18/0.18 | 0.18/0.18 | |
| 5.7 | | Gradeability | laden/unladen | % | 4.5/8.2 | 4.5/8.2 | 4.5/8.2 | |
| 5.8 | | Max. gradeability | laden/unladen | % | 15/20 | 15/20 | 15/20 | |
| 5.10 | | Service brake | | | Regenerative- electric/hydraulic | Regenerative- electric/hydraulic | Regenerative- electric/hydraulic | |
| Electric engine | 6.1 | Drive motor, rating S2 = 60 min | | kW | 6.5 | 6.5 | 6.5 | |
| | 6.2 | Lift motor, rating S3 = 15% | | kW | 14 | 14 | 14 | |
| | 6.3 | Battery according to DIN 43531/35/36 A, B, C, no | | | 43531C/254-2 | 43531C/254-2 | 43531C/254-2 | |
| | 6.4 | Battery voltage/nominal capacity K ₅ | | V/Ah | 48/620 Li-Ion: 48/817 | 48/620 Li-Ion: 48/817 | 48/620 Li-Ion: 48/817 | |
| | 6.5 | Battery weight (depending on manufacturer ±5%) | | kg | 940 | 940 | 940 | |
| | 6.6 | Energy consumption according to VDI cycle | | kWh/h | 3.42 | 3.61 | 3.58 | |
| Misc. | 10.1 | Operating pressure for attachments | | bar | 200 | 200 | 200 | |
| | 10.2 | Oil volume for attachments | | l/min | 20 | 20 | 20 | |
| | 10.7 | Sound pressure level L _{pa2} , at driver's seat | | dB(A) | 69 | 69 | 69 | |

¹ Reduced in steps of 72 mm depending on the size of the battery

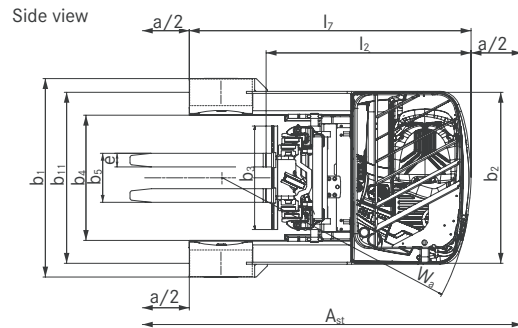
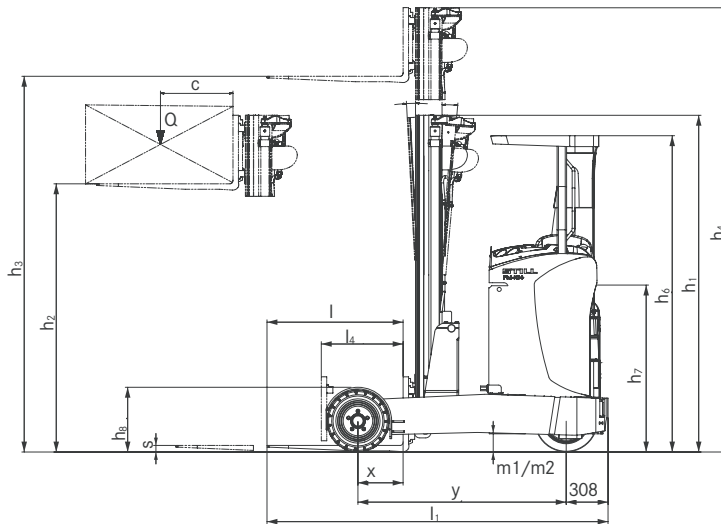
² A_{st} extended in steps of 72 mm depending on the size of the battery

³ With the option cabin/weather protection, height h₆ is 2304 mm

⁴ With optional cabin, length will be extended by 80 mm

⁵ Increases in steps of 72 mm for each larger battery size

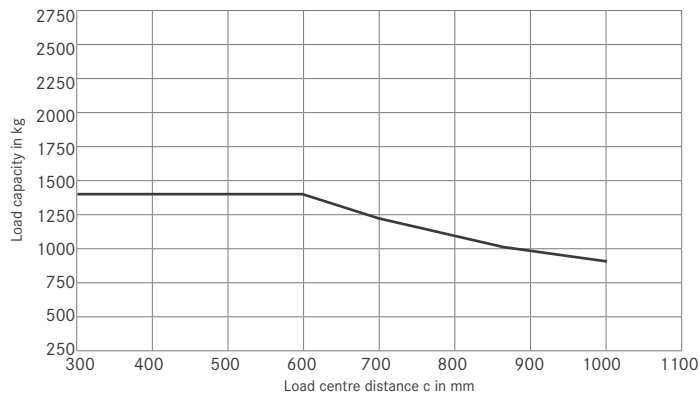
FM-X SE Driver Seated Reach Truck with Super Elastic Tyres
 Technical Drawings



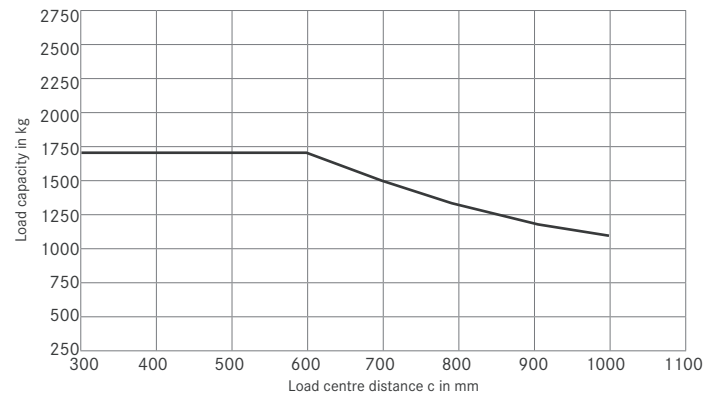
Top view

Basic Load Capacities

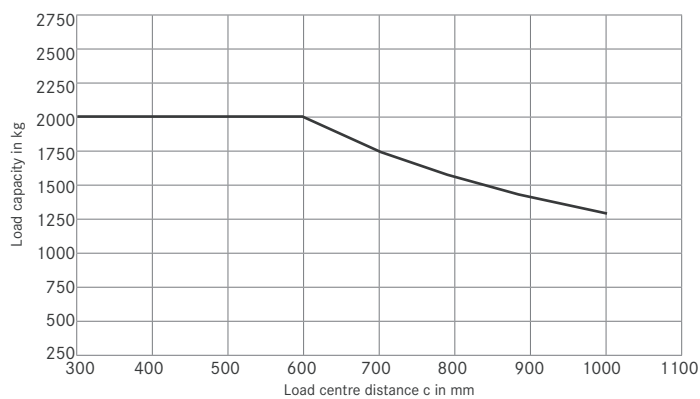
Load capacity FM-X 14 SE



Load capacity FM-X 17 SE



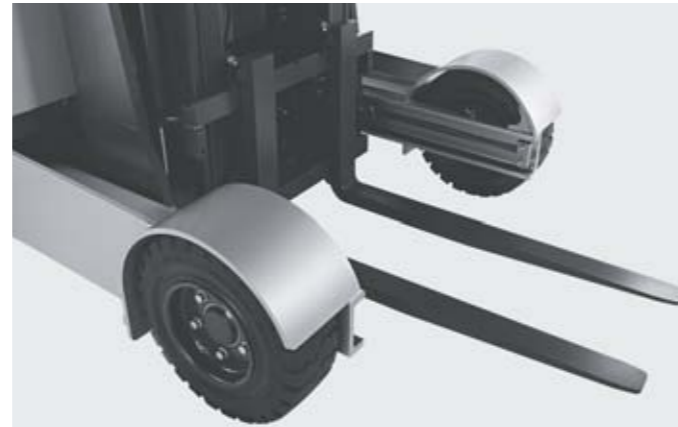
Load capacity FM-X 20 SE



FM-X SE Driver Seated Reach Truck with Super Elastic Tyres
Detailed Photos



Optimal panoramic view



Super Elastic tyres with wheel protection for more security



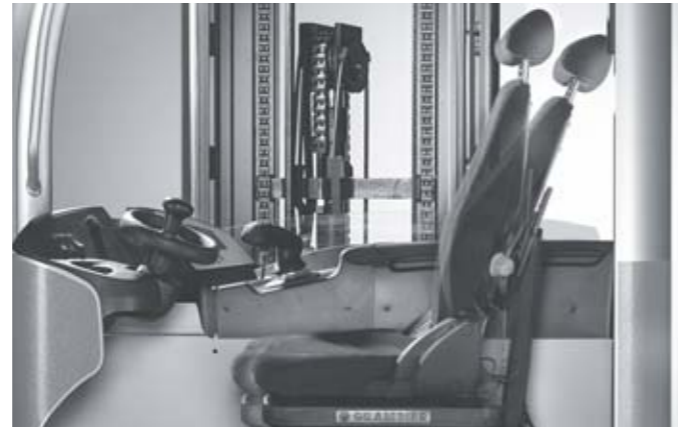
Individually adaptable workstation



Ergonomic and sensitive handling thanks to Joystick 4Plus



Safe entry thanks to additional step



Comfortable reclining seat for an optimal view upwards



Alternative operation concept: Fingertip

Mast Tables

| | | | | Telescopic mast | | | | | | | | |
|------------|-----------------------|------------------|-----|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| FM-X 14 SE | Height, mast lowered | h ₁ | mm | 2125 | 2225 | 2375 | 2475 | 2575 | 2675 | 2875 | 3075 | 3175 |
| | Free lift | h ₂ | mm | - | - | - | - | - | - | - | - | - |
| | Lift | h ₃ | mm | 2920 | 3120 | 3420 | 3620 | 3820 | 4020 | 4420 | 4820 | 5020 |
| | Height, mast extended | h ₄ | mm | 3555 | 3755 | 4055 | 4255 | 4455 | 4655 | 5055 | 5455 | 5655 |
| | Tilt of mast | forward/backward | α/β | ° | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 |

| | | | | Triplex mast | | | | | | | | | | | | | | | |
|------------|-----------------------|------------------|-----|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| FM-X 14 SE | Height, mast lowered | h ₁ | mm | 2025 | 2090 | 2125 | 2275 | 2325 | 2375 | 2475 | 2525 | 2575 | 2675 | 2775 | 2875 | 2975 | 3075 | 3175 | 3275 |
| | Free lift | h ₂ | mm | 1390 | 1455 | 1490 | 1640 | 1690 | 1740 | 1840 | 1890 | 1940 | 2040 | 2140 | 2240 | 2340 | 2440 | 2540 | 2640 |
| | Lift | h ₃ | mm | 4250 | 4440 | 4550 | 5000 | 5150 | 5300 | 5600 | 5750 | 5900 | 6200 | 6500 | 6800 | 7100 | 7400 | 7700 | 8000 |
| | Height, mast extended | h ₄ | mm | 4885 | 5075 | 5185 | 5635 | 5785 | 5935 | 6235 | 6385 | 6535 | 6835 | 7135 | 7435 | 7735 | 8035 | 8335 | 8635 |
| | Tilt of mast | forward/backward | α/β | ° | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 |

| | | | | Telescopic mast | | | | | | | | |
|------------|-----------------------|------------------|-----|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|
| FM-X 17 SE | Height, mast lowered | h ₁ | mm | 2125 | 2225 | 2375 | 2475 | 2575 | 2675 | 2875 | 3075 | 3175 |
| | Free lift | h ₂ | mm | - | - | - | - | - | - | - | - | - |
| | Lift | h ₃ | mm | 2920 | 3120 | 3420 | 3620 | 3820 | 4020 | 4420 | 4820 | 5020 |
| | Height, mast extended | h ₄ | mm | 3555 | 3755 | 4055 | 4255 | 4455 | 4655 | 5055 | 5455 | 5655 |
| | Tilt of mast | forward/backward | α/β | ° | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 |

| | | | | Triplex mast | | | | | | | | | | | | | | | |
|------------|-----------------------|------------------|-----|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| FM-X 17 SE | Height, mast lowered | h ₁ | mm | 2025 | 2090 | 2125 | 2275 | 2325 | 2375 | 2475 | 2525 | 2575 | 2675 | 2775 | 2875 | 2975 | 3075 | 3175 | 3275 |
| | Free lift | h ₂ | mm | 1380 | 1455 | 1480 | 1630 | 1680 | 1730 | 1830 | 1880 | 1930 | 2030 | 2130 | 2230 | 2330 | 2430 | 2530 | 2630 |
| | Lift | h ₃ | mm | 4250 | 4440 | 4550 | 5000 | 5150 | 5300 | 5600 | 5750 | 5900 | 6200 | 6500 | 6800 | 7100 | 7400 | 7700 | 8000 |
| | Height, mast extended | h ₄ | mm | 4895 | 5085 | 5195 | 5645 | 5785 | 5945 | 6245 | 6395 | 6545 | 6845 | 7145 | 7445 | 7745 | 8045 | 8345 | 8645 |
| | Tilt of mast | forward/backward | α/β | ° | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 |

| | | | | Triplex mast | | | | | | | | | | | | | | | |
|------------|-----------------------|------------------|-----|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| FM-X 20 SE | Height, mast lowered | h ₁ | mm | 2025 | 2090 | 2125 | 2275 | 2325 | 2375 | 2475 | 2525 | 2575 | 2675 | 2775 | 2875 | 2975 | 3075 | 3175 | 3275 |
| | Free lift | h ₂ | mm | 1380 | 1455 | 1480 | 1630 | 1680 | 1730 | 1830 | 1880 | 1930 | 2030 | 2130 | 2230 | 2330 | 2430 | 2530 | 2630 |
| | Lift | h ₃ | mm | 4080 | 4270 | 4380 | 4830 | 4980 | 5130 | 5430 | 5580 | 5730 | 6030 | 6330 | 6630 | 6930 | 7200 | 7500 | 7800 |
| | Height, mast extended | h ₄ | mm | 4725 | 4915 | 5025 | 5475 | 5625 | 5775 | 6075 | 6225 | 6375 | 6675 | 6975 | 7275 | 7575 | 7845 | 8145 | 8445 |
| | Tilt of mast | forward/backward | α/β | ° | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 1.0/3.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 | 0.5/2.0 |

FM-X SE Driver Seated Reach Truck with Super Elastic Tyres

For combined indoor and outdoor use thanks to Super Elastic tyres

Holistic ergonomics concept

Precise and exact hydraulic control with Fingertip operation or Joystick 4Plus



Thanks to its special Super Elastic tyres, this smart reach truck is not only capable to move materials indoors optimally but outdoors as well. The FM-X SE easily moves loads with a weight of up to two tons at a maximum speed of 14 km/h reliably to the desired destination. On arriving, it lifts the load up to a height of up to eight metres. The large rubberised tyres and substantial floor clearance make it an ideal truck to stack and retrieve loads from outdoor racking systems. Assistance systems such as Easy Target or the optional camera system support the drivers in their work and ensure maximum precision at top lift

heights. The FM-X SE is an efficient compact energy bundle – thanks to the Li-Ion battery technology with outstanding availability. This technology does not only allow opportunity charging without problems – in only 30 minutes, the lithium ion battery can be charged up to 50 per cent – the FM-X SE also convinces with its elaborate safety concept. For example, the Curve Speed Control system automatically adjusts the driving speed to the steering angle. With the FM-X SE you can rely on an efficient, precise and safe turnover of your goods at any time – indoor as well as outdoor.

Extensive Equipment

Power

- Powerful acceleration combined with high travel speeds of 14 km/h and lifting speeds of up to 0.50 m/s
- Sufficient energy for any use, thanks to battery capacities of 560 Ah to 700 Ah
- Substantial ground clearance and optimum traction allow for individual use even on bumpy surfaces
- Lasting energy for multi-shift operation: high battery capacity and optional sideways battery change
- Top availability: The lithium-ion battery bundles a lot of energy and can be quickly and easily opportunity charged

Precision

- OPTISPEED reduces mast vibrations to a minimum for medium lifting heights and enables quick goods handling
- Clear visibility of goods without being disrupted by hydraulic lines on the fork carriage, thanks to the unique sideshift mast
- Top precision right from the first millimetre thanks to the optical lift height sensor

Ergonomics

- Cushioned drive wheel and Super Elastic tyres to reduce impact when driving over uneven surfaces
- Relaxed view upwards and beyond goods, thanks to unique comfortable reclining seat

- Easy to operate all functions without having to alternate grip, thanks to Joystick 4Plus or Fingertip operation
- Easy storage and retrieval with the Easy Target lift height pre-selection system

Compactness

- Suitable for even the most narrow working widths, thanks to the reach truck concept

Safety

- The large step and handhold make it safe and easy to get in
- Robust steel chassis with secure contour guiding in areas that are hard to drive on
- Versatile, flexible access control with FleetManager 4.x
- Extremely safe to drive round bends with Curve Speed Control depending on steering angle

Environmental Responsibility

- Long-lasting and energy-saving LED headlights
- Blue-Q efficiency mode saves up to 10 per cent energy at the press of a button with no loss of performance
- Energy recovery when braking means you can use the machinery for longer with optimum use of resources
- Low operation costs: low energy consumption and long maintenance intervals

FM-X SE Driver Seated Reach Truck with Super Elastic Tyres Equipment Variants



| | | FM-X SE 14 | FM-X SE 17 | FM-X SE 20 |
|------------------------|--|------------|------------|------------|
| Driver's seat | Steering wheel and seat adjustment | ● | ● | ● |
| | Comfortable seat with hydraulic damping and weight adjustment | ● | ● | ● |
| | Comfortable reclining seat | ○ | ○ | ○ |
| | Heated driver's seat | ○ | ○ | ○ |
| | Leatherette driver's seat and vinyl cover | ○ | ○ | ○ |
| | Free view mast with visually-optimised overhead guard | ● | ● | ● |
| | Joystick 4Plus (hydraulic control system without having to alternate grip) | ● | ● | ● |
| | Fingertip (hydraulic control system with four individual levers) | ○ | ○ | ○ |
| | Five driver profiles, selected according to operator | ● | ● | ● |
| | Integrated storage facilities, drink holder | ● | ● | ● |
| | Display: clear display of active operating states | ● | ● | ● |
| | Fully electric 360° steering | ● | ● | ● |
| Steering | Fully electric 180° steering | ○ | ○ | ○ |
| | Fully electric steering with reverse function | ○ | ○ | ○ |
| | Redundant steering safety system | ● | ● | ● |
| Mast | Triple free view mast with free lift | ● | ● | ● |
| | Telescopic free view mast | ○ | ○ | ○ |
| | Hydraulic mast for lateral shifting with mast tilt | ● | ● | ● |
| | Mast reach damping system | ● | ● | ● |
| Hydraulics | Free view fork carriage | ● | ● | ● |
| | Noise-optimised hydraulic pump | ● | ● | ● |
| | Ancillary hydraulics, onefold or twofold | ○ | ○ | ○ |
| | Proportional valve technology for sensitive movements | ● | ● | ● |
| Drives | Individual parametrisation options for hydraulic functions | ● | ● | ● |
| | Multiple hydraulic movements can be controlled simultaneously | ● | ● | ● |
| | Smooth, continuous acceleration to maximum speed | ● | ● | ● |
| | Maintenance-free drives for driving, steering and lifting | ● | ● | ● |
| Brake | Fully enclosed component which is impervious to dirt and dust | ● | ● | ● |
| | Integral current and temperature sensors for function monitoring | ● | ● | ● |
| | Generator braking system | ● | ● | ● |
| Safety and performance | Energy recovery when braking | ● | ● | ● |
| | Hydraulic impeller brake as additional brake | ● | ● | ● |
| | Electromagnetic disc brake as parking brake and emergency stop | ● | ● | ● |
| | PIN code access, keyless, with button | ○ | ○ | ○ |
| | Indicator light | ○ | ○ | ○ |
| | Warning light | ○ | ○ | ○ |
| | Headlights | ○ | ○ | ○ |
| | Overhead guard with Makrolon or mesh grid | ○ | ○ | ○ |
| | Steering angle-dependent speed control | ○ | ○ | ○ |
| | Stroke shut-off for intermediate stroke and/or end stroke limiting | ○ | ○ | ○ |
| | Lift height display | ○ | ○ | ○ |
| | Lift height preselection system | ○ | ○ | ○ |
| Battery system | FleetManager: access authorisation, shock detection, reports | ○ | ○ | ○ |
| | OPTISPEED: lift height and load-dependent speed regulation | ○ | ○ | ○ |
| | Audible driving warning signal (Digisound) | ○ | ○ | ○ |
| | Battery changing with crane | ● | ● | ● |
| | Battery changing from the side with roller track | ○ | ○ | ○ |
| | Battery compartment for 560 Ah battery | ● | ● | ○ |
| | Battery compartment for 700 Ah battery | ○ | ○ | ● |
| | STILL Li-Ion battery for 817 Ah | ○ | ○ | ○ |
| Additional equipment | Battery transport and changing frame | ○ | ○ | ○ |
| | Various fork lengths | ○ | ○ | ○ |
| | Preparation for data terminal | ○ | ○ | ○ |
| | Automatic fork tilt and sideshift centring at the press of a button | ○ | ○ | ○ |
| | Weather protection | ○ | ○ | ○ |
| | Full cab | ○ | ○ | ○ |
| | Load backrest | ○ | ○ | ○ |
| | Panoramic rear-view mirror | ● | ● | ● |
| | Shift and lowering lock | ○ | ○ | ○ |
| Prong camera system | ○ | ○ | ○ | |
| Dual-pedal control | ○ | ○ | ○ | |

● Standard ○ Optional — Not available