FM-4W 20

FM-4W 25

FM-4W Technical Data

4-way reach truck

first in intralogistics

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.

Characteristics	1.1	Manufacturer				STILL	STILL
	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
Wheels | chassis	3.1	Tyres (rubber, polyurethane, pneumatic)				Polyurethane	Polyurethane
	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_{10}	mm	0	0
	3.7	Track width, Load end		b_{11}	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_1	mm	See table	See table
	4.3	Free lift		h_1	mm	h_1-717	h_1-717
	4.4	Lift		h_3	mm	See table	See table
	4.5	Height, mast raised		h_4	mm	See table	See table
	4.7	Height over overhead guard (cab)		h_6	mm	2155	2155
	4.8	Seat height/platform height		h_7	mm	1050/1120	1050/1120
	4.10	Height of straddle arms or load wheels		h_8	mm	420	420
	4.19	Overall length		l_1	mm	2451*	2548*
	4.20	Length including fork backs		l_2	mm	1301	1398*
	4.21	Overall width		b_1/b_2	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_3	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_4	mm	924	924
	4.28	Reach		l4	mm	750*	813*
	4.32	Floor clearance, centre of wheel-base		m_2	mm	47	47
	4.33	Working aisle width with 1000 x 1200 pallet crossways		A_{st}	mm	2769*	2895*
	4.34	Working aisle width with 800 x 1200 pallet lengthways		A_{st}	mm	2797	2913*
	4.35	Turning radius		W_a	mm	1778	1935
	4.37	Length over straddle arms		l_7	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_5			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

				Residual Q kg*
h_1	h_2	h_3	h_4	
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

				Residual Q kg*	Residual Q kg*
h_1	h_2	h_3	h_4	for fork adjustment 560-1550 mm	for fork adjustment 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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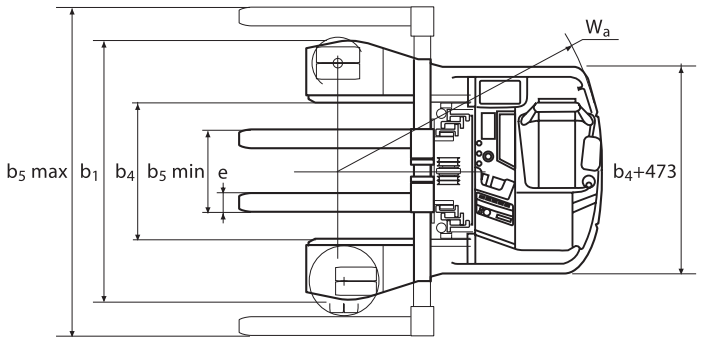
h_3 = 4350 mm



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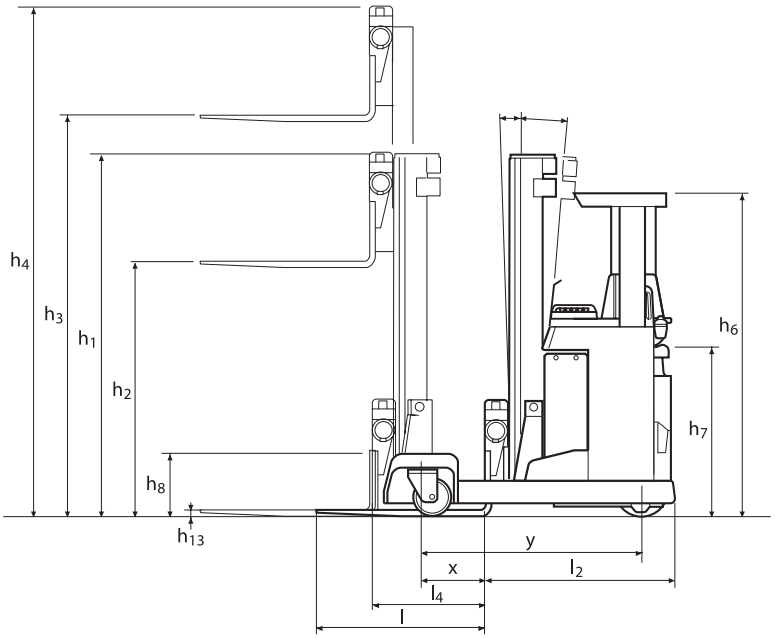
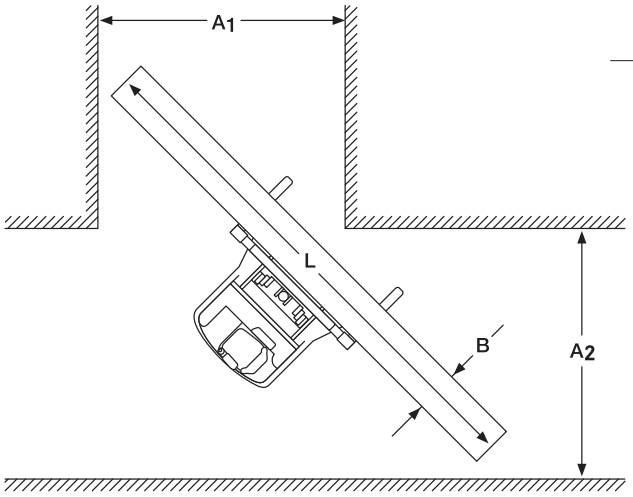
h_3 = 4500 mm (Fork adjustment 560–2220 mm)

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 sped 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	●
	Separate parameter setting option for the hydraulic functions	●
Drive	Three phase drives	●
	Best energy utilisation thanks to spur bevel gear transmission	●
	Treaded drive wheel	○
Brake	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	●
	Central Service and Diagnostics interface	●
Battery	Battery extracted using mast reach	●
	Battery changing using hoist	●
	Battery chaging to side using roller track	○
Additional equipment	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.

GL ISO 9001 ISO 14001 OHSAS 18001 ISO 50001
GL Systems Certification

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FM 4W EN 02/14 TD Subject to technical modifications.