Technical sheet:

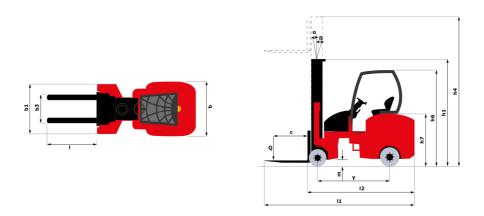
EMA II 20 HD-1





Model Name			EMA II 20 Hb-1	breated off bulle 10, 2025 at 0.05 f M
Model Name		Technical characteristics		Metric
Power source	1.1	Manufacturer		Manitou
	1.2	Model Name		EMA II 20 HD-1
Max. capacity	1.3	Power source		Electrical
Load cleater of grantly Carl Soft man	1.4	Operator type		Seated
Load distance, centre of drive axie to fook x 728 mm 1745	1.5	Max. capacity	Q	2000 kg
Westbase	1.6	Load center of gravity	C	500 mm
Weelshase Weight Weight	1.8	- /	X	
	1.9		V	1745 mm
Serice weight		Weight		
Weight on front aske (Unladern) / rear aske (Unladern)	2.1	•		6900 ka
Weight on front axie (Unladen) / rear axie (Unladen) Solid tres	2.2	•		
Ninesis Solid times Soli	2.3	. , , , ,		
Tires type	2.0			2200 kg / 1700 kg
1	3 1			Solid tires
Dimensions of rear wheels				
2				
Number of drive wheels 2				
Front wheel gauge				
Rear wheel gauge bil 1250 mm			h10	
Height of overhead guard (cabin) h6 2260 mm	3./		DII	1250 mm
1.8. Seat height/stand height h7 1200 mm .19 Overall length i1 3710 mm .20 Length to face of forks i2 2560 mm .21 Overall width b1 1250 mm .22 Fork section / width / length s / e / l 40 mm x 125 mm x 1150 mm .22 Fork carriage width b3 860 mm .31 Ground clearance below mast m1 50 mm .32 Ground clearance to wheelbase m2 130 mm .33 A isle width for 800 x 1200 crossways Ast 1950 mm .34 A isle width for 800 x 1200 pallet lengthways Ast 2150 mm .4 Fefformances	4.7			2012
19 Overall length 11 3710 mm 12 2550 mm				
Length to face of forks 12 2560 mm 21 Overall width 1250 mm 22 Forks section / width / length 5 / e / l 40 mm x 125 mm x 1150 mm 23 Fork carriage lSt0 2328 (class/form) A/B 2 2 24 Fork carriage width 53 860 mm 31 Ground clearance below mast m1 50 mm 32 Ground clearance at centre of wheelbase m2 130 mm 33 Aisle Width for pallets 1000 x 1200 crossways Ast 1950 mm 34 Aisle Width for 800 x 1200 pallet lengthways Ast 2150 mm Performances Perf				
		•		
.22 Forks section / width / length \$ / e / I 40 mm x 125 mm x 1150 mm .23 Fork carriage Riot S228 (class/form) A/B 2 .24 Fork carriage width b3 860 mm .31 Ground clearance at centre of wheelbase m2 130 mm .32 Ground clearance at centre of wheelbase m2 130 mm .34 Aisle Width for pallets 1000 x 1200 crossways Ast 2150 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm .35 Lifting speed (laden / unladen) Ast 2150 mm .35 Lifting speed (laden / unladen) 9 km/h-9.50 km/h 30.50 m/s-0.45 m/s .36 Lowering speed (laden / unladen) 9 kg 7.0.50 % 38 kg 7.0.50 % .37 Gradeability (laden / unladen) 9 kg 7.0.50 % 38 kg 7.0.50 % .38 Lowering speed (laden / unladen) 9 kg 7.0.50 % 38 kg 7.0.50 % .39 Lift motor rating S2 60 min 9 kg 7.0.50 % 9 kW .30		,		
2.23 Fork carriage ISO 2328 (class/form) A/B 2 2.24 Fork carriage width b3 860 mm 3.11 Ground clearance at centre of wheelbase m1 50 mm .32 Ground clearance at centre of wheelbase m2 130 mm .33 Aisle Width for pallets 1000 x 1200 crossways Ast 1950 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm Performances .10 Travel speed (laden / unladen) 9 km/h-9.50 km/h .5.1 Liffing speed (laden / unladen) 0.35 m/s-0.45 m/s .5.2 Liffung speed (laden / unladen) 8 % / 10.50 % .5.3 Lowering speed (laden / unladen) 8 % / 10.50 % .5.1 Service brake Hydraulic Engine 9 kW .5.1 Drive motor rating \$2.50 min 10 kW .5.2 Liff motor rating at \$3.15% 9 kW .5.4 Battery according to Dil N 43531/35/36 A, B, C Dil N 43595 .5.4 Battery weight (+/- 5%) 1435 kg .5.5 Battery w	4.21			
Fork carriage width	4.22	Forks section / width / length	s / e / l	
.31 Ground clearance below mast m1 50 mm .32 Ground clearance at centre of wheelbase m2 130 mm .33 Aisle Width for pallets 1000 x 1200 crossways Ast 1950 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm .34 Performances	4.23	, ,		
.32 Ground clearance at centre of wheelbase m2 130 mm .33 Aisle Width for pallets 1000 x 1200 crossways Ast 1950 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm Performances .10 Tavel speed (laden / unladen) 9 km/h-9.50 km/h .5.2 Lifting speed (laden / unladen) 0.35 m/s -0.45 m/s .5.3 Lowering speed (laden / unladen) 8 % / 10.50 % .5.7 Gradeability (laden / unladen) 8 % / 10.50 % .5.7 Gradeability (laden / unladen) 8 % / 10.50 % .5.1 Drive motor rating \$2.60 min 10 kW .5.2 Lift motor rating at \$3.15% 9 kW .5.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595 .5.4 Battery voltage / capacity 48 V / 775 Ah .5.5 Battery weight (+/- 5%) 1435 kg Miscellaneous Moster AC speed controller .3.2 Working hydraulic pressure for attachments 200 bar .3.3 Oil flow rate for attachments 25 l/min .3.4	4.24	Fork carriage width	p3	860 mm
.33 Aisle Width for pallets 1000 x 1200 crossways Ast 1950 mm .34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm Performances .5.1 Travel speed (laden / unladen) 9 km/h-9.50 km/h .5.2 Lifting speed (laden / unladen) 0.35 m/s-0.45 m/s .5.3 Lowering speed (laden / unladen) 0.40 m/s-0.36 m/s .5.7 Gradeability (laden / unladen) 8 % / 10.50 % .5.7 Gradeability (laden / unladen) 8 % / 10.50 % .5.1 Drive motor rating \$2 60 min 10 kW .5.2 Lift motor rating \$2 50 min 10 kW .5.2 Lift motor rating \$2 50 min 10 kW .5.2 Lift motor rating \$2 60 min 10 kW .5.2 Battery according to DIN 43531/35/36 A, B, C DIN 43595 .5.4 Battery voltage / capacity 48 V / 775 Ah .5.5 Battery weight (+/- 5%) 48 V / 775 Ah .5.5 Battery weight (+/- 5%) Mosfet AC speed controller .8.1 Type of drive control Mosfet AC speed controller .8.2 Working hydraulic pressure for attachments 200 bar <td>4.31</td> <td>Ground clearance below mast</td> <td>m1</td> <td>50 mm</td>	4.31	Ground clearance below mast	m1	50 mm
3.34 Aisle width for 800 x 1200 pallet lengthways Ast 2150 mm Performances 5.1 Travel speed (laden / unladen) 9 km/h-9.50 km/h 5.2 Lifting speed (laden / unladen) 0.35 m/s-0.45 m/s 5.3 Lowering speed (laden / unladen) 8 / 10.50 % 5.7 Gradeability (laden / unladen) 8 / 10.50 % 5.7 Gradeability (laden / unladen) 8 / 10.50 % 5.10 Service brake Hydraulic 5.10 Drive motor rating \$2.60 min 10 kW 5.1 Drive motor rating \$2.60 min 10 kW 5.2 Lift motor rating \$3.15% 9 kW 5.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595 5.4 Battery voltage / capacity 48 V / 775 Ah 5.5 Battery weight (+/- 5%) 1435 kg 8.1 Type of drive control Mosfet AC speed controller 8.2 Working hydraulic pressure for attachments 200 bar 8.3 Oil flow rate for attachments 25 l/min 8.4 Measured/guaranteed mean noise level at the ear of the operator < 73 dB	4.32	Ground clearance at centre of wheelbase	m2	130 mm
Performances	4.33	Aisle Width for pallets 1000 x 1200 crossways	Ast	1950 mm
5.1 Travel speed (laden / unladen) 9 km/h-9.50 km/h 5.2 Lifting speed (laden / unladen) 0.35 m/s-0.45 m/s 5.3 Lowering speed (laden / unladen) 0.40 m/s-0.36 m/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 5.10 Service brake Hydraulic Engine 5.1 Drive motor rating \$2.60 min 10 kW 5.2 Lift motor rating at \$3.15% 9 kW 5.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595 5.4 Battery voltage / capacity 48 V / 775 Ah 5.5 Battery weight (+/- 5%) 1435 kg Miscellaneous 3.1 Type of drive control Mosfet AC speed controller 3.2 Working hydraulic pressure for attachments 200 bar 3.3 Oil flow rate for attachments 25 l/min 3.4 Measured/guaranteed mean noise level at the ear of the operator < 73 dB	4.34	Aisle width for 800 x 1200 pallet lengthways	Ast	2150 mm
5.2 Lifting speed (laden / unladen) 0.35 m/s-0.45 m/s 5.3 Lowering speed (laden / unladen) 0.40 m/s-0.36 m/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 1.0 Service brake Hydraulic Engine 5.1 Drive motor rating S2 60 min 10 kW 5.2 Lift motor rating at S3 15% 9 kW 5.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595 5.4 Battery voltage / capacity 48 V / 775 Ah 5.5 Battery weight (+/- 5%) 1435 kg Miscellaneous 3.1 Type of drive control Mosfet AC speed controller 3.2 Working hydraulic pressure for attachments 200 bar 3.3 Oil flow rate for attachments 25 l/min 3.4 Measured/guaranteed mean noise level at the ear of the operator <73 dB		Performances		
Lowering speed (laden / unladen) Gradeability (laden / unladen) Service brake Engine 5.1 Drive motor rating S2 60 min 5.2 Lift motor rating at S3 15% Battery according to DIN 43531/35/36 A, B, C 5.4 Battery voltage / capacity Battery weight (+/- 5%) Miscellaneous 8.1 Type of drive control Working hydraulic pressure for attachments 3.2 Working hydraulic pressure for attachments 3.3 Oil flow rate for attachments Measured/guaranteed mean noise level at the ear of the operator 10.40 m/s-0.36 m/s 8 * / 10.50 % Hydraulic 10 kW 10 kW 10 kW 10 kW 10 kW 11 435 kg	5.1	Travel speed (laden / unladen)		9 km/h-9.50 km/h
5.7 Gradeability (laden / unladen) Service brake Engine 5.1 Drive motor rating S2 60 min 5.2 Lift motor rating at S3 15% Battery according to DIN 43531/35/36 A, B, C 5.4 Battery voltage / capacity 5.5 Battery weight (+/- 5%) Miscellaneous 8.1 Type of drive control Working hydraulic pressure for attachments 3.2 Working hydraulic pressure for attachments 3.3 Oil flow rate for attachments Measured/guaranteed mean noise level at the ear of the operator 8 ***/ 10.50 % Hydraulic 10 kW 10 kW	5.2	Lifting speed (laden / unladen)		0.35 m/s-0.45 m/s
Service brake Engine 5.1 Drive motor rating S2 60 min 5.2 Lift motor rating at S3 15% 5.3 Battery according to DIN 43531/35/36 A, B, C 5.4 Battery voltage / capacity 5.5 Battery weight (+/- 5%) Miscellaneous 8.1 Type of drive control 8.2 Working hydraulic pressure for attachments 8.3 Oil flow rate for attachments 8.4 Measured/guaranteed mean noise level at the ear of the operator Hydraulic 10 Hydraulic 11 kW 10 kW 10 kW 11	5.3	Lowering speed (laden / unladen)		0.40 m/s-0.36 m/s
Engine Incompose the properties of the position of the	5.7	Gradeability (laden / unladen)		8 % / 10.50 %
Drive motor rating \$2.60 min Lift motor rating at \$3.15% Battery according to DIN 43531/35/36 A, B, C DIN 43595 Battery voltage / capacity Battery weight (+/- 5%) Miscellaneous Type of drive control Working hydraulic pressure for attachments Working hydraulic pressure for attachments Measured/guaranteed mean noise level at the ear of the operator 10 kW 9 kW 10 kW 11 435 kg Mosfet AC speed controller 200 bar 25 l/min < 73 dB	5.10	Service brake		Hydraulic
Lift motor rating at S3 15% 9 kW Battery according to DIN 43531/35/36 A, B, C Battery voltage / capacity 48 V / 775 Ah Battery weight (+/- 5%) 1435 kg Miscellaneous		Engine		
Battery according to DIN 43531/35/36 A, B, C DIN 43595 48 V / 775 Ah 48 V / 775 Ah 5.5 Battery weight (+/- 5%) Miscellaneous 3.1 Type of drive control Working hydraulic pressure for attachments 3.2 Working hydraulic pressure for attachments 3.3 Oil flow rate for attachments Measured/guaranteed mean noise level at the ear of the operator DIN 43595 48 V / 775 Ah Mosfet AC speed controller 200 bar 25 I/min < 73 dB	6.1	Drive motor rating S2 60 min		10 kW
Battery voltage / capacity Battery weight (+/- 5%) Miscellaneous 3.1 Type of drive control Working hydraulic pressure for attachments 3.2 Working hydraulic pressure for attachments 3.3 Oil flow rate for attachments Measured/guaranteed mean noise level at the ear of the operator 48 V / 775 Ah 1435 kg Mosfet AC speed controller 200 bar 25 I/min < 73 dB	6.2	Lift motor rating at S3 15%		9 kW
Battery weight (+/- 5%) Miscellaneous 3.1 Type of drive control 3.2 Working hydraulic pressure for attachments 3.3 Oil flow rate for attachments 3.4 Measured/guaranteed mean noise level at the ear of the operator 3.5 Battery weight (+/- 5%) 3.6 Mosfet AC speed controller 3.7 Mosfet AC speed controller 3.8 200 bar 3.9 Lymin 3.1 A measured/guaranteed mean noise level at the ear of the operator	6.3	Battery according to DIN 43531/35/36 A, B, C		DIN 43595
Miscellaneous 3.1 Type of drive control Mosfet AC speed controller 3.2 Working hydraulic pressure for attachments 200 bar 3.3 Oil flow rate for attachments 25 l/min 3.4 Measured/guaranteed mean noise level at the ear of the operator <73 dB	6.4	Battery voltage / capacity		48 V / 775 Ah
Miscellaneous 3.1 Type of drive control Mosfet AC speed controller 3.2 Working hydraulic pressure for attachments 200 bar 3.3 Oil flow rate for attachments 25 l/min 3.4 Measured/guaranteed mean noise level at the ear of the operator <73 dB	6.5	Battery weight (+/- 5%)		1435 kg
Type of drive control Mosfet AC speed controller Working hydraulic pressure for attachments Oil flow rate for attachments Measured/guaranteed mean noise level at the ear of the operator Mosfet AC speed controller 200 bar 25 I/min < 73 dB				
Working hydraulic pressure for attachments 200 bar 3.3 Oil flow rate for attachments 25 l/min 3.4 Measured/guaranteed mean noise level at the ear of the operator <73 dB	8.1			Mosfet AC speed controller
Oil flow rate for attachments 25 l/min Measured/guaranteed mean noise level at the ear of the operator <73 dB	8.2			·
Measured/guaranteed mean noise level at the ear of the operator <73 dB	8.3			
,	8.4			* *
AT 150000 16761 01 105 UNVELO E01 014-UUINU IO DIN 17 USD	8.4	Sound level at the driver's ear according to DIN 12 053		73 dB

EMA II 20 HD-1 - Dimensional drawing



Characteristics of masts and residual capacities

Free Lift Triplex (FLT)		FLT 56	FLT 60	FLT 66	FLT 70	FLT 76	FLT 80	FLT 86	FLT 90	FLT 95	FLT 102	FLT 106
α - Mast/fork carriage tilt, forward	۰	1	1	1	1	1	1	1	1	1	1	1
β - Mast/fork carriage tilt, backward	۰	3	3	3	3	3	3	3	3	3	3	3
h1 - Mast lowered height	mm	2750	2900	3150	3290	3590	3720	4020	4150	4500	4690	4820
h2 - Mast free lift	mm	1930	2080	2330	2470	2770	2900	3200	3330	3650	3870	4000
h3 - Mast lifting height	mm	5550	6000	6600	7020	7620	8010	8610	9000	9500	10200	10560
h4 - Mast extended height	mm	6380	6830	7430	7850	8450	8840	9440	9830	10475	11175	11535
Residual capacity with integrated side shift at max heigth	kg	1600	1450	1450	1300	1300	1200	1100	1000	900	750	650





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