Technical sheet:

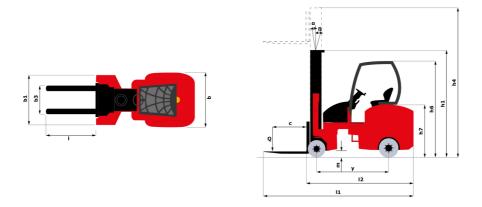
## EMA II 20





Model Name			EMA II 20	EMA II 20 Greated Off Julie 10, 2023 at 0.07 Aivi C				
Model Name		Technical characteristics		Metric				
Power source     Power source     Senter   Sen	1.1	Manufacturer		Manitou				
	1.2	Model Name		EMA II 20				
Max. capacity	1.3	Power source		Electrical				
Load clear or gravity	1.4	Operator type		Seated				
Load distance, centre of drive aske to fook   x   278 mm   1745 mm   Wheelbase   y   1745 mm	1.5	Max. capacity	Q	2000 kg				
	1.6	Load center of gravity	С	500 mm				
Meight   Service weight   Service   Service weight   Service	1.8	Load distance, centre of drive axle to fork	x	278 mm				
Serice weight	1.9	Wheelbase	у	1745 mm				
		Weight						
Weight on front arte (Uniaden) / rear axise (Uniaden)   Winest	2.1	Service weight		6600 kg				
Vincels   Time type	2.2	Weight on front axle (laden) / rear axle (laden)		4800 kg / 4400 kg				
Tires type	2.3	Weight on front axle (Unladen) / rear axle (Unladen)		2200 kg / 4400 kg				
		Wheels						
	3.1	Tires type		Solid tires				
1.5   Number of front wheels / rear wheels   2 / 2	3.2			412 x 178				
5.2         Number of drive wheels         2           6.6         Front wheel gauge         b10         1125 mm           6.7         Height of owehead guard (cabin)         b11         1200 mm           1.7         Height of owehead guard (cabin)         h6         2260 mm           1.8         Sea theight/stand height         h7         1200 mm           1.9         Overall length         11         3710 mm           1.0         Length to face of forks         12         2560 mm           2.0         Length to face of forks         12         2560 mm           2.0         Verall width         b1         1200 mm           2.2         Forks section / width / length         s e / l         40 mm x 125 mm x 1150 mm           2.2         Forks section / width / length         s e / l         40 mm x 125 mm x 1150 mm           2.2         Fork seatings ISO 2328 (class from) A/B         2         2           2.2         Fork carriage ISO 2328 (class from) A/B         3         80 mm           3.1         Ground clearance at centre of wheelbase         m1         50 mm           3.2         Ground clearance at centre of wheelbase         m2         130 mm           3.3         Alsie width for 800 x 1200 patert <td>3.3</td> <td>Dimensions of rear wheels</td> <td></td> <td>457 x 152</td>	3.3	Dimensions of rear wheels		457 x 152				
5.2         Number of drive wheels         2           6.6         Front wheel gauge         b10         1125 mm           1.7         Height of owehead guard (cabin)         b11         1200 mm           1.7         Height of owehead guard (cabin)         h6         2260 mm           1.8         Sex height/stand height         h7         1200 mm           1.9         Overall length         11         3710 mm           1.9         Length to face of forks         12         2560 mm           2.0         Uevall width         b1         1200 mm           2.1         Overall width         b1         1200 mm           2.2         Forks section / width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Fork section / width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Fork section / width / length         s / e / l         40 mm x 125 mm x 1150 mm           2.2         Fork section / width / length         s / e / l         40 mm x 125 mm           2.3         Fork carriage ISO 3232 (class/form) A/B         s / e         l           2.4         Fork carriage ISO 2332 (class/form) A/B         m2         130 mm           3.1         Ground clearance a	3.5							
1.7   Rear wheel gauge	.5.2	Number of drive wheels		2				
Rear wheel gauge   bil   1200 mm	3.6		b10	1125 mm				
Dimensions	3.7		b11	1200 mm				
Height of overhead guard (cabin)   h6   2260 mm     1.8								
1.8         Seat height/stand height         h7         1200 mm           1.9         Overall length         11         3710 mm           2.0         Length to face of forks         12         2560 mm           2.1         Overall width         b1         1200 mm           2.2         Fork section / width / length         s / e / I         40 mm x 125 mm x 1150 mm           2.2         Fork carriage width         b3         860 mm           3.1         Ground clearance below mast         m1         50 mm           3.2         Ground clearance te dentre of wheelbase         m2         130 mm           3.3         A isle width for allest Nodo'x 1200 crossways         Ast         1900 mm           3.4         A isle width for 800 x 1200 pallet lengthways         Ast         2100 mm           4         Travel speed (laden / unladen)         Ast         2100 mm           5.7         Gradeability (aden / unladen)         8 % 1/1.50 %         8 % 1/1.50 %           6.7         Gradeability (aden / unladen)         8 % 1/1.50 %         8 % 1/1.50 %           6.7         Gradeability (aden / unladen)         9 kW         10 kW           6.1         Drive motor rating s2.60 min         10 kW         9 kW           6.2<	4.7		h6	2260 mm				
19   Overall length	4.8							
Length to face of forks   12   2560 mm     21	1.19							
2.21         Overall width         b 1         1 200 mm           2.22         Fork section / width / length         s / e / I         40 mm x 125 mm x 1150 mm           2.32         Fork carriage ISO 2238 (class/fcm) A/B         2           2.4         Fork carriage width         b3         860 mm           3.31         Ground clearance below mast         m1         50 mm           3.2         Ground clearance at centre of wheelbase         m2         130 mm           3.3         A isle Width for 900 x 1200 pallet lengthways         Ast         1900 mm           3.3         A isle Width for 900 x 1200 pallet lengthways         Ast         2100 mm           4         Performances         4         2100 mm           5.1         Travel speed (laden / unladen)         5         8 km/h-9.50 km/h           5.2         Lifting speed (laden / unladen)         5         9 km/h-9.50 km/h           5.2         Lifting speed (laden / unladen)         5         0.35 m/s-0.45 m/s           5.1         Gradeability (laden / unladen)         5         8 % / 10.50 %           5.7         Gradeability (laden / unladen)         5         8 % / 10.50 %           5.1         D ive motor rating st 26 0 min         10 kW           5.2	1.20	•						
222         Forks section / width / length         \$ / e / l         40 mm x 125 mm x 1150 mm           23         Fork carriage Riot 2328 (class/form) A/B         2           24         Fork carriage width         b3         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         1900 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           .35         Travel speed (laden / unladen)         9 km/h-9.50 km/h         9.50 km/h           .35         Cardeability (laden / unladen)         8 % / 10.50 %         8 % / 10.50 %           .36         Battery seconicy of the 100 km         9 km/h         9 km/h           .37         Battery according	1.21	Š						
23         Fork carriage ISO 2328 (class/form) A/B         2           24         Fork carriage width         b3         860 mm           .31         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         1900 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           6-10         Travel speed (laden / unladen)         9 km/h-9.50 km/h           .5.1         Travel speed (laden / unladen)         0.35 m/s-0.45 m/s           .5.2         Lifting speed (laden / unladen)         0.40 m/s-0.36 m/s           .5.3         Lowering speed (laden / unladen)         8 % / 10.50 %           .5.1         Service brake         Hydraulic           .5.2         Engine         10 kW           .5.1         Drive motor rating \$2.60 min         10 kW           .5.2         Lift motor rating \$2.60 min         10 kW           .5.2         Battery secording to DIN 43531/35/36 A, B, C         DIN 43595           .5.4         Battery weight (4/- 5%)         1135 kg           .5.5         Battery weight (4/- 5%) <t< td=""><td>1.22</td><td></td><td></td><td></td></t<>	1.22							
Fork carriage width	1.23		-,-,-					
.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         1900 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         21000 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 ½ 10.50 %           .5.7         Gradeability (laden / unladen)         8 ½ 10.50 %           .5.0         Gradeability (laden / unladen)         8 ½ 10.50 %           .5.7         Gradeability (laden / unladen)         8 ½ 10.50 %           .5.7         Gradeability (laden / unladen)         8 ½ 10.50 %           .5.0         Service brake         Hydraulic           Engline         10 kW           .5.1         Drive motor rating \$2.50 min         9 kW           .5.2         Lift motor rating at \$3.15%         9 kW           .5.3         Battery votoriage to DIN 43531/35/36 A, B, C         DIN 43595           .5.4         Battery weight (+/-	1.24	, ,	h3					
.32         Ground clearance at centre of wheelbase         m2         130 mm           .33         Aisle Width for pallets 1000 x 1200 crossways         Ast         1900 mm           .34         Aisle width for 800 x 1200 pallet lengthways         Ast         2100 mm           Performances           .10         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 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 wortage / capacity         48 V / 750 Ah           .5.5         Battery wortage / capacity         48 V / 750 Ah           .5.5         Battery wortage / capacity         Mosfet AC speed controller           .5.5         Battery wortage / capacity         48 V / 750 Ah           .5.6         Battery wortage / capacity         Mosfet AC speed cont	1.31	,						
33       Aisle Width for pallets 1000 x 1200 crossways       Ast       1900 mm         .34       Aisle width for 800 x 1200 pallet lengthways       Ast       2100 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)       9 km/h-9.50 km/h         5.1       Drive motor rating \$2.60 min       10 kW         5.2       Lift motor rating \$2.60 min       10 kW         5.2       Lift motor rating \$2.50 min       10 kW         5.3       Battery according to DIN 43531/35/36 A, B, C       9 kW         5.4       Battery voltage / capacity       48 V / 750 Ah         5.5       Battery weight (*/- 5%)       1135 kg         5.1       Type of drive control       Mosfet AC speed controller         5.2       Working hydraulic pressure for attachments       200 bar         5.3       Oil flow rate for attachments       25 l/min         6.4       Measured/guaranteed mean noise level at the ear of the operator								
Asile width for 800 x 1200 pallet lengthways  Performances  Travel speed (laden / unladen)  Lifting speed (laden / unladen)  Lowering speed (laden / unladen)  Cardeability (laden / unladen)  Service brake  Engine  In the motor rating \$2 60 min  Dive motor rating \$2 60 min  Lift motor rating \$3 15%  Battery according to DIN 43531/35/36 A, B, C  Battery voltage / capacity  Battery voltage / capacity  Battery weight (+/- 5%)  Battery weight (+/- 5%)  Miscellaneous  Jift work of drive control  Mosfet AC speed controller  Working hydraulic pressure for attachments  Ast 2100 mm  9 km/h-9.50 km/h  0.35 m/s-0.45 m/s  8 % / 10.50 %  10.40 m/s-0.36 m/s  8 % / 10.50 %  10.40 m/s-0.36 m/s  10.60 m/s  10.60 m/s  10.60 m/s  10.60 m/s  1135 kg  1135 kg  1135 kg  1135 kg  Mosfet AC speed controller  200 bar  3.3 Oil flow rate for attachments  4 73 dB								
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 %         5.10       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 / 750 Ah         5.5       Battery weight (+/- 5%)       1135 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	.04		7,51	2100 11111				
Lifting speed (laden / unladen)  Lowering speed (laden / unladen)  Gradeability (laden / unladen)  Service brake  Engine  Lift motor rating S2 60 min  Lift motor rating at S3 15%  Battery according to DIN 43531/35/36 A, B, C  Battery weight (+/- 5%)  Miscellaneous  Lift pe of drive control  Working hydraulic pressure for attachments  Working hydraulic pressure for attachments  Measured/guaranteed mean noise level at the ear of the operator  0.35 m/s-0.45 m/s  0.40 m/s-0.36 m/s  8 % / 10.50 %  8 % / 10.50 %  Hydraulic  By W  Hydraulic  10 kW  10 kW  10 kW  10 kW  11 kW	5 1			9 km/h-9 50 km/h				
Lowering speed (laden / unladen)  Gradeability (laden / unladen)  Service brake  Engine  Lift motor rating S2 60 min  Lift motor rating at S3 15%  Battery according to DIN 43531/35/36 A, B, C  Battery weight (+/- 5%)  Miscellaneous  Lift pof drive control  Working hydraulic pressure for attachments  Working hydraulic pressure for attachments  Measured/guaranteed mean noise level at the ear of the operator  10.40 m/s-0.36 m/s  8 % / 10.50 %  8 % / 10.50 %  Hydraulic  10 kW  10 kW  10 kW  10 kW  10 kW  11 kW  11 kW  10 kW  11 kW  12 kW  13 kW  14 k V / 750 Ah  13 kg  14 k V / 750 Ah  13 kg  14 korting hydraulic pressure for attachments  200 bar  25 l/min  48 kW  48 kW  47 3 dB								
Gradeability (laden / unladen) Service brake  Engine  5.1 Drive motor rating \$2.60 min 5.2 Lift motor rating at \$3.15% Sattery according to DIN 43531/35/36 A, B, C  5.4 Battery voltage / capacity Sattery according to PIN 43531/35/36 A, B, C  Sattery weight (+/-5%) Sattery weight (+/-5%) Sattery weight (+/-5%) Sattery weight (-/-5%) Sattery we		- ' '						
Service brake  Engine  5.1 Drive motor rating \$2.60 min  5.2 Lift motor rating at \$3.15%  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  Measured/guaranteed mean noise level at the ear of the operator  Hydraulic  10 Hydraulic  10 Hydraulic  110 kW  10 kW  10 kW  110 kW  10 kW  110 kW  10 kW  110 kW  10 kW  111 kW  10 kW  111 kW  10 kW  110 kW  10 kW  110 kW  10 kW								
Engine         Incompose the control of the contr								
Drive motor rating \$2.60 min  Lift motor rating at \$3.15%  Battery according to DIN 43531/35/36 A, B, C  DIN 43595  48 V / 750 Ah  Battery weight (+/- 5%)  Miscellaneous  1.1 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 kW  9 kW  48 V / 750 Ah  1135 kg  1135 kg  Mosfet AC speed controller  200 bar  25 l/min  473 dB	5.10			riyuladiic				
Lift motor rating at S3 15% 9 kW  Battery according to DIN 43531/35/36 A, B, C  Battery voltage / capacity 48 V / 750 Ah  Battery weight (+/- 5%) 1135 kg  Miscellaneous  B.1 Type of drive control Mosfet AC speed controller  B.2 Working hydraulic pressure for attachments 200 bar  B.3 Oil flow rate for attachments 25 l/min  Measured/guaranteed mean noise level at the ear of the operator < 73 dB	6.1	•		10 kW				
Battery according to DIN 43531/35/36 A, B, C  DIN 43595 48 V / 750 Ah  48 V / 750 Ah  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  DIN 43595 48 V / 750 Ah  1135 kg  Mosfet AC speed controller  200 bar  251/min  473 dB								
Battery voltage / capacity  Battery woltage / 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  3.4 Measured/guaranteed mean noise level at the ear of the operator  48 V / 750 Ah  1135 kg  Mosfet AC speed controller  200 bar  25 l/min  473 dB		-						
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  1135 kg  Mosfet AC speed controller  200 bar  25 l/min  473 dB								
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  Mosfet AC speed controller  200 bar  25 l/min  473 dB								
Type of drive control  Nosfet 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 l/min  < 73 dB	0.0			1135 KY				
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	0 1			Monfot AC arread controller				
Oil flow rate for attachments 25 l/min Measured/guaranteed mean noise level at the ear of the operator <73 dB		••		•				
Measured/guaranteed mean noise level at the ear of the operator < 73 dB								
3.4 Sound level at the driver's ear according to DIN 12 053 73 dB		·						
	8.4	Sound level at the driver's ear according to DIN 12 053		73 dB				

EMA II 20 - Dimensional drawing



## Characteristics of masts and residual capacities

Free Lift Triplex (FLT)		FLT 42	FLT 45	FLT 50	FLT 56	FLT 60	FLT 66	FLT 72	FLT 76	FLT 80	FLT 86	FLT 90	FLT 95	FLT 102
α - Mast/fork carriage tilt, forward	٠	1	1	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	3	3
h1 - Mast lowered height	mm	2300	2410	2570	2750	2900	3150	3400	3590	3720	4020	4150	4500	4690
h2 - Mast free lift	mm	1480	1590	1750	1930	2080	2330	2580	2770	2900	3200	3330	3650	3870
h3 - Mast lifting height	mm	4200	4530	5010	5550	6000	6600	7200	7620	8010	8610	9000	9500	10200
h4 - Mast extended height	mm	5030	5360	5840	6380	6830	7430	8030	8450	8840	9440	9830	10475	11175
Residual capacity with integrated side shift at max heigth	kg	1800	1700	1600	1500	1400	1300	1200	1150	1080	1000	1000	900	750





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