Technical sheet:

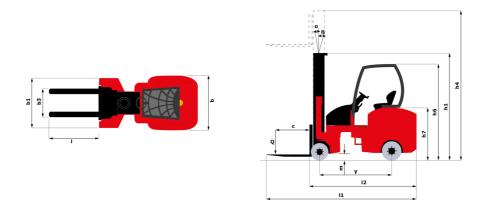
EMA II 18 HL-1





Model Name			EMAII IS HE I Cleat	ed 011 Adgust 10, 2023 at 7.20 AW
Model Name		Technical characteristics		Imperial
	1.1	Manufacturer		Manitou
	1.2	Model Name		EMA II 18 HL-1
1.5 Max. capacity C 20 in	1.3	Power source		Electrical
Load center of gravity C	1.4	Operator type		Seated
Load distance of gravity	1.5	Max. capacity	Q	3858 lb
Load distance, centre of drive axle to fork	1.6		C	20 in
	1.8		X	
Weight Service weight 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 15212 lb 152122 lb 152122 lb 152122	1.9		V	69 in
Service weight 15212 lb 9259 lb / 9925 lb 15212 lb				
Weight on front axle (laden) / rear axle (laden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) 9259 lb / 9921 lb Weight on front axle (Uniaden) / rear axle (Uniaden) / 925 lb / 9921 lb /	2.1	•		15212 lb
Weight on front axle (Uniaden) / rear axle (Uniaden) Wheels	2.2			
Wheels	2.3	- , , , ,		
Tires type	2.0			1000 10 7 10002 10
Dimensions of front wheels	3 1			Solid tires
3.3 Dimensions of rear wheels				
2				
5.5.2 Number of drive wheels 2 3.6 Front wheel gauge b10 44 in 3.7 Rear wheel gauge b11 49 in Dimensions 4.7 Height of overhead guard (cabin) h6 89 in 4.8 Seat height/stand height h7 47 in 1.9 Overall length 11 147 in 1.0 Length to face of forks 12 102 in 1.0 Overall width b1 49 in 1.0 Overall width / length s / e / 1 2 in x 5 in x 45 in 1.2 Fork carriage width / length s / e / 1 2 in x 5 in x 45 in 1.2 Fork carriage width b3 34 in 3.1 Ground clearance below mast m1 2 in 3.2 Ground clearance at centre of wheelbase m2 5 in 3.3 Aisle width for pallets 1000 x 1200 crossways Ast 77 in 3.3 Aisle width for pallets 1000 x 1200 crossways Ast 77 in 5.5 Travel speed (lade				
3.6 Front wheel gauge b10 44 in 3.7 Rear wheel gauge b11 49 in 4.7 Height of overhead guard (cabin) h6 89 in 4.8 Seat height/stand height h7 47 in 4.9 Overall length 11 147 in 4.9 Overall length 12 102 in 4.20 Length to face of forks 12 102 in 4.21 Overall width b1 49 in 4.22 Forks section / width / length \$ /e / I 2 in x 5 in x 45 in 4.23 Fork carriage width b3 3 4 in 4.31 Ground clearance below mast m1 2 in 4.32 Alsie width for solox x 1200 pallet lengthways Ast 77 in 4.34 width for solox x 1200 pallet lengthways Ast 87 in 5.1 Travel speed (laden / unladen) Ast 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 5 fmph-6 mph-6 mph 5.3 Cardeability (laden / unladen) 8 % /10.50 % 5.5 Gradeability (laden / unladen) 8 % /10.50 % 5.6 Gradeability (laden / unladen) 8 % /10.50 % 5.7 Gradeability (laden / unladen) 8 % /10.50 % 5.8 Cardeability (laden / unladen)				
Rear wheel gauge			h10	
Dimensions				
Height of overhead guard (cabin) h6 89 in 4.8 Seat height/stand height h7 47 in 1.9 Overall length 11 147 in 1.20 Length to face of forks 12 102 in 1.21 Overall width b1 49 in 1.22 Forks section / width / length 5 / e / 1 2 in x 5 in x 45 in 1.23 Fork carriage ISO 2328 (class/form) A/B 2 2.4 Fork carriage width b3 34 in 2.31 Ground clearance below mast m1 2 in 3.31 Ground clearance at centre of wheelbase m2 5 in 3.32 Ground clearance at centre of wheelbase m2 5 in 3.33 Aisle Width for pallets 1000 x 1200 crossways Ast 77 in 3.34 Aisle width for 800 x 1200 pallet lengthways Ast 37 in 5.5 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 5.5 Lowering speed (laden / unladen) 1 ft/s-1 ft/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 5.8 Engine 100 kW 5.1 Dive motor rating \$2.60 min 10 kW 5.2 Lift motor rating \$2.60 min 10 kW 5.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	3.7		DII	49 111
4.8. Sea height/stand height h7 47 in 4.19 Overall length 11 147 in 4.20 Length to face of forks 12 102 in 4.21 Overall width b1 49 in 4.22 Fork section / width / length \$ / e / I 2 in x 5 in x 45 in 4.22 Fork carriage ISO 2328 (class/form) A/B 2 2 4.24 Fork carriage width b3 34 in 3.1 Ground clearance below mast m1 2 in 3.2 Ground clearance at centre of wheelbase m2 5 in 3.3 Asiel Width for pallets 1000 x 1200 crossways Ast 77 in 3.3 Aisle width for 800 x 1200 pallet lengthways Ast 87 in 4.2 Lifting speed (laden / unladen) 6 mph-6 mph 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 8 */ 10.50 % 5.7 Gradeability (laden / unladen) 8 */ 10.50 % 8 */ 10.50 % 5.7 Gradeability (laden / unladen) 8 */ 10.50 % Hydraulic 5.1 Divie motor rating S2 60 min 10 kW	4.7		he	00:-
1.19 Overall length 11 147 in 1.20 Length to face of forks 12 102 in 1.21 Overall width b1 49 in 1.22 Forks section / width / length s / e / l 2 in x 5 in x 45 in 1.23 Fork carriage ISO 2328 (class/form) A/B 2 2 1.24 Fork carriage width b3 3 3 4 in 1.31 Ground clearance below mast m1 2 in 1.32 Ground clearance at centre of wheelbase m2 5 in 1.33 Aisle Width for pallets 1000 x 1200 crossways Ast 77 in 1.34 Aisle width for pallets 1000 x 1200 crossways Ast 87 in 1.34 Aisle width for pallet lengthways Ast 87 in 1.34 Aisle width for pallet lengthways Ast 87 in 1.35 Lifting speed (laden / unladen) 6 mph-6 mph 1 ft/s-1 ft/s 1.5.1 Travel speed (laden / unladen) 1 ft/s-1 ft/s 8 % / 10.50 % 1.5.2 Lifting speed (laden / unladen) 8 % / 10.50 % 8 % / 10.50 % 1.5.3 Lowering speed (laden / unladen) 8 %				
2.20 Length to face of forks 12 102 in 2.21 Overall width b1 49 in 2.22 Forks section / width / length \$ / e / l 2 in x 5 in x 45 in 2.23 Fork carriage ISO 2328 (class/form) A/B 2 2 2.24 Fork carriage width b3 34 in 3.31 Ground clearance below mast m1 2 in 3.32 Ground clearance at centre of wheelbase m2 5 in 3.33 Aisle Width for pallets 1000 x 1200 crossways Ast 77 in 3.34 Aisle width for 800 x 1200 pallet lengthways Ast 87 in Performances 5.1 Travel speed (laden / unladen) 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/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 6.1 Dive motor rating S2 60 min 10 kW 6.2 Lift motor rating at S3 15%				
		•		
Forks section / width / length S / e / l 2 in x 5 in x 45 in				
.23 Fork carriage ISO 2328 (class/form) A/B 2 .24 Fork carriage width b3 34 in .31 Ground clearance below mast m1 2 in .32 Ground clearance at centre of wheelbase m2 5 in .33 A isle Width for pallets 1000 x 1200 crossways Ast 77 in .34 A isle width for 800 x 1200 pallet lengthways Ast 87 in Performances .1 Travel speed (laden / unladen) 6 mph-6 mph .5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/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 .5.1 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				
Fork carriage width			s / e / I	
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.32 Ground clearance at centre of wheelbase m2 5 in .33 Aisle Width for pallets 1000 x 1200 crossways Ast 77 in .34 Aisle width for 800 x 1200 pallet lengthways Ast 87 in Performances 5.1 Travel speed (laden / unladen) 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 5.3 Lowering speed (laden / unladen) 8 % / 10.50 % 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 6.10 Service brake Hydraulic Engine 10 kW 6.1 Drive motor rating \$2 60 min 10 kW 6.2 Lift motor rating at \$3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595		,		
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Ast 87 in Performances 5.1 Travel speed (laden / unladen) 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 5.3 Lowering speed (laden / unladen) 1 ft/s-1 ft/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 1.10 Service brake Hydraulic Engine 6.1 Drive motor rating S2 60 min 1 0 kW 6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C	4.32			
Performances 5.1 Travel speed (laden / unladen) 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 5.3 Lowering speed (laden / unladen) 8 % / 10.50 % 5.7 Gradeability (laden / unladen) 8 % / 10.50 % 5.10 Service brake Hydraulic Engine 6.1 Drive motor rating \$2 60 min 10 kW 6.2 Lift motor rating at \$3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	4.33	,		
5.1 Travel speed (laden / unladen) 6 mph-6 mph 5.2 Lifting speed (laden / unladen) 1 ft/s-1 ft/s 5.3 Lowering speed (laden / unladen) 1 ft/s-1 ft/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % i.10 Service brake Hydraulic Engine 6.1 Drive motor rating \$2 60 min 10 kW 6.2 Lift motor rating at \$3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	4.34		Ast	87 in
5.2 Lifting speed (laden / unladen) 1 tt/s-1 tt/s 5.3 Lowering speed (laden / unladen) 1 tt/s-1 tt/s 5.7 Gradeability (laden / unladen) 8 % / 10.50 % i.10 Service brake Hydraulic Engine 6.1 Drive motor rating S2 60 min 10 kW 6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595				
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Engine Hydraulic 6.1 Drive motor rating S2 60 min 10 kW 6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	5.3			
Engine Company 6.1 Drive motor rating S2 60 min 10 kW 6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	5.7	Gradeability (laden / unladen)		8 % / 10.50 %
6.1 Drive motor rating S2 60 min 10 kW 6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	5.10			Hydraulic
6.2 Lift motor rating at S3 15% 9 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595		Engine		
6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43595	6.1			
	6.2	-		
6.4 Battery voltage / capacity 48 V / 775 Ah	6.3	Battery according to DIN 43531/35/36 A, B, C		
	6.4	Battery voltage / capacity		
	6.5			3164 lb
Miscellaneous		Miscellaneous		
8.1 Type of drive control Mosfet AC speed controller	8.1	Type of drive control		Mosfet AC speed controller
8.2 Working hydraulic pressure for attachments 2901 PSI	8.2	Working hydraulic pressure for attachments		2901 PSI
8.3 Oil flow rate for attachments 7 US gpm	8.3	Oil flow rate for attachments		7 US gpm
8.4 Measured/guaranteed mean noise level at the ear of the operator < 73 dB	8.4	Measured/guaranteed mean noise level at the ear of the operator		< 73 dB
8.4 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 18 HL-1 - Dimensional drawing



Characteristics of masts and residual capacities

Free Lift Triplex (FLT)		FLT 80	FLT 84	FLT 86	FLT 90	FLT 95	FLT 100	FLT 102	FLT 106
α - Mast/fork carriage tilt, forward	۰	1	1	1	1	1	1	1	1
β - Mast/fork carriage tilt, backward	۰	4	4	4	4	4	4	4	4
h1 - Mast lowered height	in	146.5	153.5	158.3	163.4	177.2	180.7	184.6	189.8
h2 - Mast free lift	in	114.2	121.3	126	131.1	143.7	148.4	152.4	157.5
h3 - Mast lifting height	in	315.4	330.7	339	354.3	374	394.5	401.6	415.7
h4 - Mast extended height	in	348	363.4	371.7	387	412.4	427.2	440	454.1
Residual capacity with integrated side shift at max heigth	lb	2756	2535	2535	2205	2205	1653	1653	1433





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