Technical sheet :



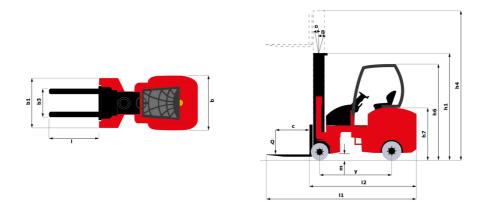




|       | Technical characteristics                                       |       |
|-------|---|-------|
| 1.1   | Manufacturer  |       |
| 1.2   | Model Name  |       |
| 1.3   | Power source  |       |
| 1.4   | Operator type   |       |
| 1.5   | Max. capacity   | C     |
| 1.6   | Load center of gravity  | С     |
| 1.8   | Load distance, centre of drive axle to fork                     | х     |
| 1.9   | Wheelbase   | у     |
|       | Weight  |       |
| 2.1   | Service weight  |       |
| 2.2   | Weight on front axle (laden) / rear axle (laden)                |       |
| 2.3   | Weight on front axle (Unladen) / rear axle (Unladen)            |       |
| 2.0   | Wheels  |       |
| 3.1   | Tires type  |       |
|       |   |       |
| 3.2   | Dimensions of front wheels                                      |       |
| 3.3   | Dimensions of rear wheels                                       |       |
| 3.5   | Number of front wheels / rear wheels                            |       |
| 3.5.2 | Number of drive wheels  |       |
| 3.6   | Front wheel gauge   | b1    |
| 3.7   | Rear wheel gauge  | b1    |
|       | Dimensions  |       |
| 4.7   | Height of overhead guard (cabin)                                | h     |
| 4.8   | Seat height/stand height  | h     |
| 4.19  | Overall length  | 11    |
| 4.20  | Length to face of forks   | 12    |
| 4.21  | Overall width   | b1    |
| 4.22  | Forks section / width / length                                  | s / e |
| 4.23  | Fork carriage ISO 2328 (class/form) A/B                         |       |
| 4.24  | Fork carriage width   | b     |
| 4.31  | Ground clearance below mast                                     | m     |
| 4.32  | Ground clearance at centre of wheelbase                         | m     |
| 4.33  | Aisle Width for pallets 1000 x 1200 crossways                   | As    |
| 4.34  | Aisle width for 800 x 1200 pallet lengthways                    | As    |
|       | Performances  |       |
| 5.1   | Travel speed (laden / unladen)                                  |       |
| 5.2   | Lifting speed (laden / unladen)                                 |       |
| 5.3   | Lowering speed (laden / unladen)                                |       |
| 5.7   | Gradeability (laden / unladen)                                  |       |
| 5.10  | Service brake   |       |
| 3.10  |   |       |
| 6.1   | Engine  |       |
| 6.1   | Drive motor rating \$2.60 min                                   |       |
| 6.2   | Lift motor rating at S3 15%                                     |       |
| 6.3   | Battery according to DIN 43531/35/36 A, B, C                    |       |
| 6.4   | Battery voltage / capacity                                      |       |
| 6.5   | 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 |       |
| 8.4   | Sound level at the driver's ear according to DIN 12 053         |       |

| Manitou<br>EMA II 13<br>Electrical<br>Seated<br>1300 kg<br>500 mm<br>278 mm<br>1855 mm<br>1855 mm<br>5900 kg<br>3350 kg / 3850 kg<br>1900 kg / 4000 kg<br>3350 kg / 3850 kg<br>1900 kg / 4000 kg<br>Solid tires<br>412 x 127 mm<br>2 / 2<br>2 / 2<br>2 / 2<br>2 / 2<br>2 / 2<br>2 / 2<br>325 mm<br>1060 mm<br>2 / 2<br>2 / 2<br>3890 mm<br>2 / 2<br>3890 mm<br>2 / 2<br>3890 mm<br>2 / 40 mm x 100 mm x 150 mm<br>1060 mm<br>1060 mm<br>1060 mm<br>1060 mm<br>1060 mm<br>1050 mm<br>1050 mm<br>1050 mm<br>130 mm<br>1900 mm<br>1900 mm<br>1900 mm<br>1900 mm   |
|--|
| Electrical     Seated     1300 kg     500 mm     278 mm     1855 mm     825 mm     1855 mm     S900 kg     3350 kg / 3850 kg     1900 kg / 4000 kg     3350 kg / 3850 kg     1900 kg / 4000 kg     2000 kg     Solid tires     412 x 127 mm     457 x 152 mm     2 / 2     2     2     2     2     2     2     2     2     2     2     2     2     2     2     3890 mm     2740 mm     1060 mm     2     3890 mm     2740 mm     1060 mm     130 mm     130 mm     130 mm     130 mm     130 mm     130 mm     9 km/h=9.50 km/h     0.35 m/s-0.45 m/s  |
| Seated     1300 kg     500 mm     278 mm     1855 mm     85900 kg     3350 kg / 3850 kg     1900 kg / 4000 kg     3350 kg / 3850 kg     1900 kg / 4000 kg     2000 kg     Solid tires     412 x 127 mm     457 x 152 mm     2 / 2     2     2     2     2     2     2     2     2     3890 mm     2740 mm     1060 mm     2740 mm     1060 mm     2740 mm     1060 mm     2     860 mm     130 mm     130 mm     130 mm     130 mm     1300 mm     100 kW     9 km/h-9.50 km/h   |
| 1300 kg<br>500 mm<br>278 mm<br>1855 mm<br>5900 kg<br>3350 kg / 3850 kg<br>3350 kg / 3850 kg<br>1900 kg / 4000 kg<br>3000 kg<br>30 |
| 500 mm<br>278 mm<br>1855 mm<br>5900 kg<br>3350 kg / 3850 kg<br>1900 kg / 4000 kg<br>Solid tires<br>412 x 127 mm<br>412 x 127 mm<br>2 / 2<br>2<br>825 mm<br>1060 mm<br>2260 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1060 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1060 mm<br>40 mm x 100 mm x 1150 mm<br>2<br>860 mm<br>50 mm<br>130 mm<br>130 mm<br>130 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s -0.45 m/s<br>0.40 m/s -0.35 m/s<br>8 % / 10.50 %<br>Hydraulic   |
| 278 mm<br>1855 mm<br>1855 mm<br>5900 kg<br>3350 kg / 3850 kg<br>3350 kg / 3850 kg<br>3350 kg / 3850 kg<br>3000 kg<br>3000 kg<br>3000 kg<br>4000 kg<br>4000 kg<br>4000 kg<br>4000 kg<br>4000 kg<br>4000 kg<br>400 kg<br>400 kg<br>400 mm<br>400 mm<br>4   |
| 1855 mm   5900 kg   3350 kg / 3850 kg   3350 kg / 3850 kg   1900 kg / 4000 kg   4000 kg   4000 kg   200 kg   2/2   2   2/2   2   2/2   2   2/2   2   2/2   2   2/2   2   2/2   2   2/2   2   2/2   2   2   2   2   2   2   3890 mm   2740 mm   1060 mm x 100 mm x 1150 mm   2   3800 mm   2740 mm   1060 mm   130 mm   130 mm   130 mm   1900 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   0.40 m/s-0.35 m/s   8 % / 10.50 %   4   10 kW   9 kW   DIN 43595   |
| 5900 kg<br>3350 kg / 3850 kg<br>3350 kg / 3850 kg<br>1900 kg / 4000 kg<br>Solid tires<br>412 x 127 mm<br>457 x 152 mm<br>2 / 2<br>2<br>825 mm<br>1060 mm<br>2260 mm<br>1200 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1060 mm<br>1200 mm<br>13890 mm<br>2740 mm<br>1060 mm<br>1070 mm<br>10700 mm  |
| 3350 kg / 3850 kg   1900 kg / 4000 kg   Solid tires   412 x 127 mm   457 x 152 mm   2 / 2   3890 mm   2740 mm   1060 mm x 100 mm x 1150 mm   2   860 mm   50 mm   130 mm   1700 mm   1900 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   0.40 m/s-0.35 m/s   8 % / 10.50 %   Hydraulic   10 kW   9 kW   DIN 43595   |
| 3350 kg / 3850 kg   1900 kg / 4000 kg   Solid tires   412 x 127 mm   457 x 152 mm   2 / 2   3890 mm   2740 mm   1060 mm x 100 mm x 1150 mm   2   860 mm   50 mm   130 mm   1700 mm   1900 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   0.40 m/s-0.35 m/s   8 % / 10.50 %   Hydraulic   10 kW   9 kW   DIN 43595   |
| 1900 kg / 4000 kg   Solid tires   412 x 127 mm   457 x 152 mm   2 / 2   2   825 mm   1060 mm   2260 mm   1200 mm   3890 mm   2740 mm   1060 mm x 100 mm x 1150 mm   1060 mm   1060 mm   1200 mm   3890 mm   2740 mm   1060 mm   13890 mm   1060 mm   1060 mm   1000 mm   1000 mm   1000 mm x 100 mm x 1150 mm   1130 mm   130 mm   130 mm   1300 mm   1900 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   8 % / 10.50 %   Hydraulic   10 kW   9 kW   DIN 43595  |
| Solid tires<br>412 x 127 mm<br>457 x 152 mm<br>2 / 2<br>2<br>825 mm<br>1060 mm<br>2260 mm<br>2260 mm<br>1200 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>1000 mm<br>10000 mm<br>10000 mm<br>10000 mm<br>100000000000000000000000000000000000   |
| 412 x 127 mm<br>457 x 152 mm<br>2 / 2<br>825 mm<br>1060 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>130 mm<br>1000 mm<br>1000 mm<br>1000 mm   |
| 412 x 127 mm<br>457 x 152 mm<br>2 / 2<br>825 mm<br>1060 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>130 mm<br>100 mm<br>100 mm<br>100 mm<br>100 mm  |
| 457 x 152 mm   2 / 2   2   825 mm   1060 mm   2260 mm   1200 mm   1200 mm   2740 mm   2740 mm   1060 mm   1000 mm x 100 mm x 1150 mm   1000 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   0.40 m/s-0.35 m/s   8 % / 10.50 %   Hydraulic   10 kW   9 kW   DIN 43595   |
| 2 / 2<br>2<br>825 mm<br>1060 mm<br>2260 mm<br>2260 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1060 mm<br>1060 mm<br>1050 mm<br>1050 mm<br>1050 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>130 mm<br>1000 mm<br>10000 mm<br>10000 mm<br>100000000000000000000000000000000000   |
| 2<br>825 mm<br>1060 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>2740 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>1060 mm<br>1050 mm<br>100 mm<br>130 mm<br>130 mm<br>130 mm<br>1300 mm<br>9 km/h-9.50 km/h<br>0.35 m/s - 0.45 m/s<br>0.40 m/s - 0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW   |
| 825 mm<br>1060 mm<br>2260 mm<br>2260 mm<br>1200 mm<br>1200 mm<br>1200 mm<br>2740 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>1060 mm<br>1050 mm<br>1050 mm<br>1050 mm<br>130 mm<br>130 mm<br>130 mm<br>1300 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW   |
| 1060 mm<br>2260 mm<br>2260 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>1070 mm<br>1070 mm<br>1070 mm<br>10700 mm<br>107000 mm<br>10700 mm<br>107000 mm<br>10700 mm<br>10700 mm<br>10700 mm<br>10700 mm<br>10700 mm<br>107000 mm<br>107000 mm<br>10700000000000000000000000000000000000   |
| 2260 mm<br>1200 mm<br>1200 mm<br>3890 mm<br>2740 mm<br>2740 mm<br>1060 mm<br>2740 mm<br>1060 mm<br>1060 mm<br>2<br>860 mm<br>2<br>860 mm<br>50 mm<br>130 mm<br>130 mm<br>130 mm<br>1300 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW<br>DIN 43595   |
| 1200 mm<br>3890 mm<br>2740 mm<br>1060 mm<br>1060 mm<br>2<br>860 mm<br>2<br>860 mm<br>300 mm<br>130 mm<br>130 mm<br>130 mm<br>1300 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>4 Hydraulic<br>10 kW<br>9 kW<br>9 kW  |
| 1200 mm<br>3890 mm<br>2740 mm<br>1060 mm<br>1060 mm<br>2<br>860 mm<br>2<br>860 mm<br>300 mm<br>130 mm<br>130 mm<br>130 mm<br>1300 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>4 Hydraulic<br>10 kW<br>9 kW<br>9 kW  |
| 2740 mm<br>1060 mm<br>1060 mm x 1050 mm x 1150 mm<br>2<br>860 mm<br>50 mm<br>130 mm<br>130 mm<br>130 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s 0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>10 kW<br>10 kW  |
| 1060 mm   40 mm x 100 mm x 1150 mm   2   860 mm   50 mm   130 mm   130 mm   1700 mm   1900 mm   9 km/h-9.50 km/h   0.35 m/s-0.45 m/s   0.40 m/s-0.35 m/s   8 % / 10.50 %   Hydraulic   10 kW   9 kW   DIN 43595  |
| / I 40 mm x 100 mm x 1150 mm<br>2<br>860 mm<br>50 mm<br>130 mm<br>130 mm<br>1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s 0.45 m/s<br>0.40 m/s 0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW  |
| 2<br>860 mm<br>50 mm<br>130 mm<br>130 mm<br>1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s 0.45 m/s<br>0.40 m/s 0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595   |
| 860 mm<br>50 mm<br>130 mm<br>1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW   |
| 50 mm<br>130 mm<br>1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW<br>DIN 43595  |
| 130 mm<br>1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW  |
| 1700 mm<br>1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW  |
| 1900 mm<br>9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>9 kW<br>DIN 43595  |
| 9 km/h-9.50 km/h<br>0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595   |
| 0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595   |
| 0.35 m/s-0.45 m/s<br>0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595   |
| 0.40 m/s-0.35 m/s<br>8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595  |
| 8 % / 10.50 %<br>Hydraulic<br>10 kW<br>9 kW<br>DIN 43595   |
| Hydraulic<br>10 kW<br>9 kW<br>DIN 43595  |
| 10 kW<br>9 kW<br>DIN 43595   |
| 9 kW<br>DIN 43595  |
| DIN 43595  |
|  |
| 40 V / 600 A h   |
| 48 V / 620 Ah  |
| 1030 kg  |
|  |
|  |
| Mosfet AC speed controller   |
| 200 bar  |
| 200 bar<br>25 l/min  |
| 200 bar  |

## EMA II 13 - Dimensional drawing



EMA II 13 Created on 7 May 2024 at 10:08:03 PM UTC

## Characteristics of masts and residual capacities

| Free Lift Triplex (FLT)                                      | FLT 42 | FLT 50 | FLT 56 | FLT 60 | FLT 66 | FLT 76 |      |
|--|--------|--------|--------|--------|--------|--------|------|
| Mast/fork carriage tilt, forward                             | ۰      | 1      | 1      | 1      | 1      | 1      | 1    |
| Mast/fork carriage tilt, backward                            | ٥      | 3      | 3      | 3      | 3      | 3      | 3    |
| h1 - Mast lowered height                                     | mm     | 2360   | 2630   | 2810   | 2960   | 3210   | 3650 |
| h2 - Mast free lift  | mm     | 1400   | 1750   | 193    | 2080   | 2330   | 2670 |
| h3 - Mast lifting height                                     | mm     | 4200   | 5010   | 5550   | 6000   | 6600   | 7620 |
| h4 - Mast extended height                                    | mm     | 5030   | 5910   | 6450   | 6900   | 7500   | 8520 |
| Residual capacity with integrated side shift at max heigth k |        | 1300   | 1200   | 1100   | 1000   | 900    | 750  |



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