

Technical sheet :

# **EMA II 20 HD-1**

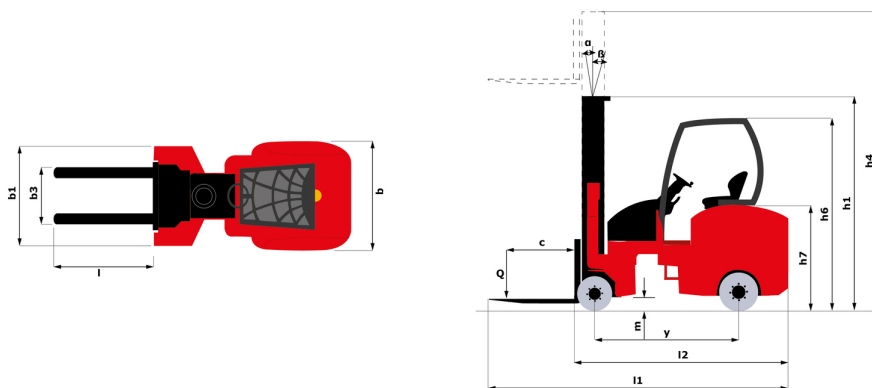
---



 **MANITOU**  
HANDLING YOUR WORLD

| Technical characteristics |   |           | Metric                     |
|---------------------------|---|-----------|----------------------------|
| 1.1                       | Manufacturer  |           | Manitou                    |
| 1.2                       | Model Name  |           | EMA II 20 HD-1             |
| 1.3                       | Power source  |           | Electrical                 |
| 1.4                       | Operator type   |           | Seated                     |
| 1.5                       | Max. capacity   | Q         | 2000 kg                    |
| 1.6                       | Load center of gravity  | c         | 500 mm                     |
| 1.8                       | Load distance, centre of drive axle to fork                     | x         | 278 mm                     |
| 1.9                       | Wheelbase   | y         | 1745 mm                    |
| Weight                    |   |           |                            |
| 2.1                       | Service weight  |           | 6900 kg                    |
| 2.2                       | Weight on front axle (laden) / rear axle (laden)                |           | 4200 kg / 4500 kg          |
| 2.3                       | Weight on front axle (Unladen) / rear axle (Unladen)            |           | 2200 kg / 4700 kg          |
| Wheels                    |   |           |                            |
| 3.1                       | Tires type  |           | Solid tires                |
| 3.2                       | Dimensions of front wheels                                      |           | 412 x 178                  |
| 3.3                       | Dimensions of rear wheels                                       |           | 457 x 178                  |
| 3.5                       | Number of front wheels / rear wheels                            |           | 2 / 2                      |
| 3.5.2                     | Number of drive wheels  |           | 2                          |
| 3.6                       | Front wheel gauge   | b10       | 1110 mm                    |
| 3.7                       | Rear wheel gauge  | b11       | 1250 mm                    |
| Dimensions                |   |           |                            |
| 4.7                       | Height of overhead guard (cabin)                                | h6        | 2260 mm                    |
| 4.8                       | Seat height/stand height  | h7        | 1200 mm                    |
| 4.19                      | Overall length  | l1        | 3710 mm                    |
| 4.20                      | Length to face of forks   | l2        | 2560 mm                    |
| 4.21                      | Overall width   | b1        | 1250 mm                    |
| 4.22                      | Forks section / width / length                                  | s / e / l | 40 mm x 125 mm x 1150 mm   |
| 4.23                      | Fork carriage ISO 2328 (class/form) A/B                         |           | 2                          |
| 4.24                      | Fork carriage width   | b3        | 860 mm                     |
| 4.31                      | Ground clearance below mast                                     | m1        | 50 mm                      |
| 4.32                      | Ground clearance at centre of wheelbase                         | m2        | 130 mm                     |
| 4.33                      | Aisle Width for pallets 1000 x 1200 crossways                   | Ast       | 1950 mm                    |
| 4.34                      | 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 %              |
| 5.10                      | 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                  |
| 6.4                       | Battery voltage / capacity                                      |           | 48 V / 775 Ah              |
| 6.5                       | Battery weight (+/- 5%)   |           | 1435 kg                    |
| Miscellaneous             |   |           |                            |
| 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                    |
| 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 |
|--|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| $\alpha$ - Mast/fork carriage tilt, forward                | °  | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1       | 1       |
| $\beta$ - Mast/fork carriage tilt, backward                | °  | 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 height | kg | 1600   | 1450   | 1450   | 1300   | 1300   | 1200   | 1100   | 1000   | 900    | 750     | 650     |

**Head Office**

B.P. 249 - 430 rue de l'Aubinière

44150 Ancenis Cedex - France

Tel: +33 (0)2 40 09 10 11 - Fax: +33 (0)2 40 09 10 97

[www.manitou.com](http://www.manitou.com)

This publication provides a description of the configuration versions and options for Manitou products, which may differ for equipment. The equipment presented in this brochure may be part of a series, as an option, or it may not be available, depending on the versions. Manitou reserves the right, at any time and without notice, to amend the specifications described and represented. The specifications provided do not bind the manufacturer. For more details, please contact your Manitou agent. This is not a contractually binding document. The presentation of the products is not contractually binding. List of specifications non-exhaustive. The logos as well as the visual identity of the company are owned by Manitou and cannot be used without authorisation. All rights reserved. The photos and diagrams contained in this brochure are only provided for consultation and information purposes.

MANITOU BF SA - Limited company with board of directors - Share capital: 39,668,399 euros - 857 802 508 RCS Nantes