

Technical sheet :

# **EMA II 20 HD-1**

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| 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     |



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