

Technical sheet :

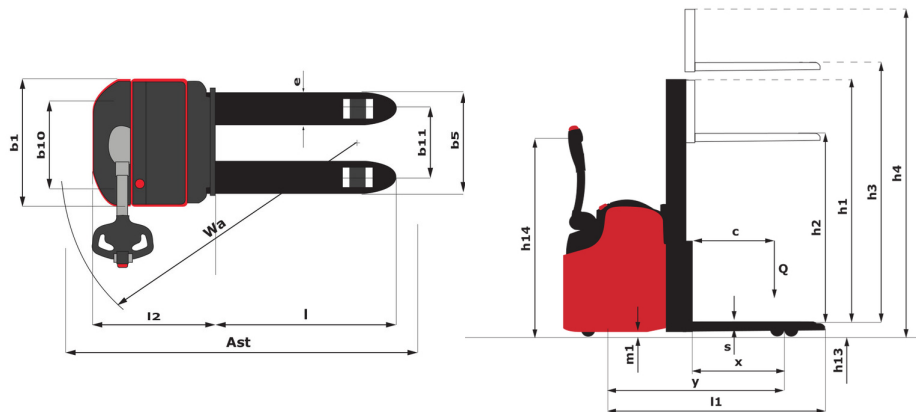
# ES 820



 **MANITOU**  
HANDLING YOUR WORLD

|       | Technical characteristics                                   |           | Metric                   |
|-------|---|-----------|--------------------------|
| 1.1   | Manufacturer  |           | Manitou                  |
| 1.2   | Model Name  |           | ES 820 FR                |
| 1.3   | Power source  |           | Electrical               |
| 1.4   | Operator type   |           | Pedestrian               |
| 1.5   | Max. capacity   | Q         | 2000 kg                  |
| 1.6   | Load center of gravity                                      | c         | 600 mm                   |
| 1.8   | Distance from Load backrest to center of rear axle          | x         | 661 mm                   |
| 1.9   | Wheelbase   | y         | 1378 mm                  |
|       | Weight  |           |                          |
| 2.1   | Service weight  |           | 1620 kg                  |
| 2.2   | Weight on front axle (laden) / rear axle (laden)            |           | 1180 kg / 2510 kg        |
| 2.3   | Weight on front axle (Unladen) / rear axle (Unladen)        |           | 1125 kg / 495 kg         |
|       | Wheels  |           |                          |
| 3.1   | Tires type  |           | Polyurethane             |
| 3.3   | Number of load wheels / Size of load wheels                 |           | 2 / 82x68                |
| 3.4   | Number of stabilizer wheels / Size of the stabilizer wheels |           | 2 / 120x50               |
| 3.5   | Number of front wheels / rear wheels                        |           | 3 / 4                    |
| 3.5.2 | Number of drive wheels / Size of drive wheels               |           | 1/254x100                |
| 3.6   | Front wheel gauge   | b10       | 664 mm                   |
| 3.7   | Rear wheel gauge  | b11       | 393 mm                   |
|       | Dimensions  |           |                          |
| 4.15  | Fork height in low position                                 | h13       | 85 mm                    |
| 4.19  | Overall length  | l1        | 2048 mm                  |
| 4.20  | Length to face of forks                                     | l2        | 898 mm                   |
| 4.21  | Overall width   | b1        | 890 mm                   |
| 4.22  | Forks section / width / length                              | s / e / l | 70 mm / 200 mm / 1150 mm |
| 4.24  | Fork carriage width   | b3        | 700 mm                   |
| 4.31  | Ground clearance below mast                                 | m1        | 30 mm                    |
| 4.32  | Ground clearance at centre of wheelbase                     | m2        | 21 mm                    |
| 4.35  | Turning radius  | Wa        | 1591 mm                  |
| 4.9   | Height tiller min. / max.                                   | h14 / h14 | 975 mm / 1375 mm         |
|       | Performances  |           |                          |
| 5.1   | Travel speed (laden / unladen)                              |           | 6 km/h / 6 km/h          |
| 5.2   | Lifting speed (laden / unladen)                             |           | 0.11 m/s / 0.20 m/s      |
| 5.3   | Lowering speed (laden / unladen)                            |           | 0.22 m/s / 0.21 m/s      |
| 5.8   | Max Gradeability (laden / unladen)                          |           | 6 % / 10 %               |
| 5.10  | Service brake   |           | Electro magnetic         |
|       | Engine  |           |                          |
| 6.1   | Drive motor rating S2 60 min                                |           | 2 kW                     |
| 6.2   | Lift motor rating at S3 15%                                 |           | 4 kW                     |
| 6.3   | Battery according to DIN 43531/35/36 A, B, C                |           | Traction                 |
| 6.4   | Battery voltage / capacity                                  |           | 24 V / 315 Ah            |
| 6.5   | Battery weight (+/- 5%)                                     |           | 275 kg                   |
|       | Miscellaneous   |           |                          |
| 8.1   | Type of drive control                                       |           | AC                       |
| 8.4   | Sound level at the driver's ear according to DIN 12 053     |           | 65 dB                    |

## ES 820 - Dimensional drawing



# Characteristics of masts and residual capacities

| Central Cylinder Duplex (CCD)   |    | FVD 29 | FVD 34 |
|---------------------------------|----|--------|--------|
| h1 - Mast lowered height        | mm | 1940   | 2190   |
| h3 - Mast lifting height        | mm | 2940   | 3440   |
| h4 - Mast extended height       | mm | 3365   | 3865   |
| Residual capacity at max height | kg | 1600   | 1300   |

| Central Cylinder Simplex (CCS)  |    | CCS 15 | CCS 17 |
|---------------------------------|----|--------|--------|
| h1 - Mast lowered height        | mm | 1940   | 2190   |
| h2 - Mast free lift             | mm | 1510   | 1760   |
| h3 - Mast lifting height        | mm | 1510   | 1760   |
| h4 - Mast extended height       | mm | 1940   | 2190   |
| Residual capacity at max height | kg | 2000   | 2000   |

| Free Lift Duplex (FLD)          |    | FLD 29 | FLD 34 |
|---------------------------------|----|--------|--------|
| h1 - Mast lowered height        | mm | 1940   | 2190   |
| h2 - Mast free lift             | mm | 1510   | 1760   |
| h3 - Mast lifting height        | mm | 2935   | 3435   |
| h4 - Mast extended height       | mm | 3365   | 3865   |
| Residual capacity at max height | kg | 1600   | 1300   |

| Free Lift Triplex (FLT)         |    | FLT 42 | FLT 47 | FLT 54 |
|---------------------------------|----|--------|--------|--------|
| h1 - Mast lowered height        | mm | 1900   | 2060   | 2300   |
| h2 - Mast free lift             | mm | 1465   | 1625   | 1875   |
| h3 - Mast lifting height        | mm | 4245   | 4725   | 5455   |
| h4 - Mast extended height       | mm | 4710   | 5190   | 5880   |
| Residual capacity at max height | kg | 750    | 550    | 450    |



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