Technical sheet:

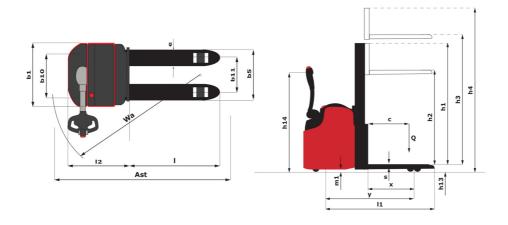
## ES 616 LI





1.2       Model Name       ES 616 LI         1.3       Power source       Electrical         1.4       Operator type       Pedestrian         1.5       Max. capacity       Q       1600 kg         1.6       Load center of gravity       c       600 mm         1.8       Distance from Load backrest to center of rear axle       x       848 mm         1.9       Wheelbase       y       1492 mm         2.1       Service weight       1283 kg         2.2       Weight on front axle (laden) / rear axle (laden)       1216 kg / 1660 kg         2.3       Weight on front axle (Uniaden) / rear axle (Uniaden)       1033 kg / 280 kg         Wheels         3.1       Tires type       Polyuethane         3.3       Number of load wheels / Size of load wheels       4 / 82 x 68         3.4       Number of stabilizer wheels / Size of the stabilizer wheels       2 / 4         3.5       Number of firth wheels / rear wheels       2 / 4         3.5       Number of drive wheels / Size of drive wheels       1/230x70         3.6       Front wheel gauge       b10       529 mm				cated on August 2, 2020 at 3.54 AW
1.2   Model Name		Technical characteristics		Metric
Power source	1.1	Manufacturer		Manitou
1.4   Operator type	1.2	Model Name		ES 616 LI
Max. capacity	1.3	Power source		Electrical
1.6   Load center of gravity   C   S00 mm     1.8   Distance from Load backrest to center of rear axie   X   848 mm     1.9   Weight   Wheelbase   Y   1442 mm     2.1   Service weight   2.2   Weight not rota axie (laden) / rear axie (laden)     2.2   Weight not front axie (laden) / rear axie (laden)     3.3   Wheels	1.4	Operator type		Pedestrian
1.5   Distance from Load backrest to center of rear axie	1.5	Max. capacity	Q	1600 kg
1.9   Wheelbase   y   1492 mm	1.6	Load center of gravity	С	600 mm
Weight   Service weight   1283 kg   1216 kg / 1660 kg   1216 kg / 1660 kg   1226 kg / 1660 kg   1238 kg / 280 kg   1216 kg / 1660 kg   1238 kg / 280	1.8	Distance from Load backrest to center of rear axle	x	848 mm
Service weight   1233 kg   1223 kg   1223 kg   1226 kg   1600 kg   1238 kg   250 kg   1238 kg   12	1.9	Wheelbase	у	1492 mm
Weight on front axle (ludern) / rear axle (ladern)   1216 kg / 1660 kg   1033 kg / 280 kg		Weight		
Weight on front axle (Unladen) / rear axie (Unladen)	2.1	Service weight		1283 kg
Number   Stabilizer wheels   Size of load wheels   Polyurehane	2.2	Weight on front axle (laden) / rear axle (laden)		1216 kg / 1660 kg
3.1   Tires type	2.3	Weight on front axle (Unladen) / rear axle (Unladen)		1033 kg / 280 kg
3.3 Number of load wheels / Size of load wheels 3.4 Number of stabilizer wheels / Size of the stabilizer wheels 3.5 Number of fortive wheels / Size of the stabilizer wheels 3.5 Number of fortive wheels / Size of drive wheels 3.6 Front wheel gauge 3.6 Front wheel gauge 3.7 Rear wheel gauge 3.8 Dill 380 mm  Dimensions 4.6 Initial lift will not position 4.15 Fork height in low position 4.19 Overall length 4.20 Length of face of forks 4.21 Overall width 4.21 Overall width 4.22 Forks section / width / length 4.22 Forks section / width / length 4.23 Aisle width for pallets 1000 x 1200 crossways 4.3 Aisle width for 800 x 1200 crossways 4.3 Aisle width for 800 x 1200 crossways 4.3 Aisle width for 800 x 1200 pallet lengthways 4.9 Height tiller min. / max.		Wheels		
Number of stabilizer wheels / Size of the stabilizer wheels   2 / 4	3.1	Tires type		Polyurethane
2	3.3	Number of load wheels / Size of load wheels		4 / 82 x 68
Number of drive wheels / Size of drive wheels   1/230x70   5.29 mm   5.20 mm   5.29 mm   5.20 mm   5.29 mm   5.20 mm   5.29 mm   5.20	3.4	Number of stabilizer wheels / Size of the stabilizer wheels		1 / 120 x 54
Sear wheel gauge	3.5	Number of front wheels / rear wheels		2 / 4
Sear wheel gauge	3.5.2	Number of drive wheels / Size of drive wheels		1/230x70
Rear wheel gauge   bil   380 mm	3.6		b10	
Dimensions	3.7		b11	380 mm
4.15         Fork height in low position         h13         86 mm           4.19         Overall length         i1         2035 mm           4.20         Length to face of forks         i2         846 mm           4.21         Overall width         b1         800 mm           4.22         Fork section / width / length         s / e / l         60 mm / 185 mm / 1190 mm           4.24         Fork carriage width         b3         700 m           4.32         Ground clearance at centre of wheelbase         m2         30 mm           4.33         A liste Width for pallets 1000 x 1200 crossways         Ast         2520 mm           4.34         A isle width for 800 x 1200 pallet lengthways         Ast         2435 mm           4.35         Tuming radius         Wa         1716 mm           4.9         Height tiller min. / max.         h14 / h14         750 mm / 1250 mm           Performances         ****         ****         6 km/h / 6 km/h           5.1         Travel speed (laden / unladen)         6 km/h / 6 km/h         0.18 m/s / 0.30 m/s         5.5           5.3         Lowering speed (laden / unladen)         0.27 m/s / 0.22 m/s         7 % / 10 %         5.5           5.1         Service brake         Electro magnetic </td <td>4.6</td> <td></td> <td>h5</td> <td>110 mm</td>	4.6		h5	110 mm
1				
Length to Face of forks   12   846 mm				
4.21       Overall width       b1       800 mm         4.22       Forks section / width / length       s / e / l       60 mm / 185 mm / 1190 mm         4.24       Fork camiage width       b3       700 m         4.32       Ground clearance at centre of wheelbase       m2       30 mm         4.33       Aisle Width for pallets 1000 x 1200 crossways       Ast       2520 mm         4.34       Aisle width for 800 x 1200 pallet lengthways       Ast       2435 mm         4.35       Tuming radius       Wa       1716 mm         4.9       Height tiller min. / max.       h14 / h14       750 mm / 1250 mm         5.1       Travel speed (laden / unladen)       6 km/h / 6 km/h         5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       0.27 m/s / 0.22 m/s         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         6.1       Drive motor rating \$2.60 min       1.50 kW         6.2       Lift motor rating \$2.60 min       1.50 kW         6.3       Battery voltage / capacity       24 V / 180 Ah         6.4       Battery voltage / capacity       24 V / 180 Ah <t< td=""><td></td><td>-</td><td></td><td></td></t<>		-		
Forks section / width / length				
Fork carriage width				
A.32   Ground clearance at centre of wheelbase   m2   30 mm     A.33   Aisle Width for pallets 1000 x 1200 crossways   Ast   2520 mm     A.34   Aisle width for 800 x 1200 pallet lengthways   Ast   2435 mm     A.35   Tuming radius   Wa   1716 mm     A.36   Height tiller min. / max.   h14 / h14   750 mm / 1250 mm     Performances				
4.33       Aisle Width for pallets 1000 x 1200 crossways       Ast       2520 mm         4.34       Aisle width for 800 x 1200 pallet lengthways       Ast       2435 mm         4.35       Tuming radius       Wa       1716 mm         4.9       Height tiller min. / max.       h14 / h14       750 mm / 1250 mm         Performances         5.1       Travel speed (laden / unladen)       6 km/h / 6 km/h         5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       0.27 m/s / 0.22 m/s         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engline         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating s2 60 min       3 kW         6.2       Lift motor rating s1 S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery widage / capacity       24 V / 180 Ah         6.5       Battery wight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC		-		
4.34       Aisle width for 800 x 1200 pallet lengthways       Ast       2435 mm         4.35       Tuming radius       Wa       1716 mm         4.9       Height tiller min. / max.       h14 / h14       750 mm / 1250 mm         Performances         5.1       Travel speed (laden / unladen)       6 km/h / 6 km/h         5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       0.27 m/s / 0.22 m/s         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating \$2.60 min       1.50 kW         6.2       Lift motor rating at \$3.15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery weight (+/-5%)       24 V / 180 Ah         6.5       Battery weight (+/-5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
Tuming radius   Wa   1716 mm				
4.9       Height tiller min. / max.       h14 / h14       750 mm / 1250 mm         Performances         5.1       Travel speed (laden / unladen)       6 km/h / 6 km/h         5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       7 % / 10 %         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating at S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC		· · · · · ·		
Performances           5.1         Travel speed (laden / unladen)         6 km/h / 6 km/h           5.2         Lifting speed (laden / unladen)         0.18 m/s / 0.30 m/s           5.3         Lowering speed (laden / unladen)         7 % / 10 %           5.8         Max Gradeability (laden / unladen)         7 % / 10 %           5.10         Service brake         Electro magnetic           Engine           6.1         Drive motor rating S2 60 min         1.50 kW           6.2         Lift motor rating at S3 15%         3 kW           6.3         Battery according to DIN 43531/35/36 A, B, C         DIN 43535-B           6.4         Battery voltage / capacity         24 V / 180 Ah           6.5         Battery weight (+/- 5%)         220 kg           Miscellaneous           8.1         Type of drive control         AC		•		
5.1       Travel speed (laden / unladen)       6 km/h / 6 km/h         5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       0.27 m/s / 0.22 m/s         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating at S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC			,	, 55, 1255
5.2       Lifting speed (laden / unladen)       0.18 m/s / 0.30 m/s         5.3       Lowering speed (laden / unladen)       7 % / 10 %         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating at S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC	5.1			6 km/h / 6 km/h
5.3       Lowering speed (laden / unladen)       0.27 m/s / 0.22 m/s         5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating at S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
5.8       Max Gradeability (laden / unladen)       7 % / 10 %         5.10       Service brake       Electro magnetic         Engine         6.1       Drive motor rating S2 60 min       1.50 kW         6.2       Lift motor rating at S3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
Electro magnetic         Engine       Electro magnetic         6.1       Drive motor rating \$2 60 min       1.50 kW         6.2       Lift motor rating at \$3 15%       3 kW         6.3       Battery according to DIN 43531/35/36 A, B, C       DIN 43535-B         6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
Engine         Common Section 1           6.1         Drive motor rating S2 60 min         1.50 kW           6.2         Lift motor rating at S3 15%         3 kW           6.3         Battery according to DIN 43531/35/36 A, B, C         DIN 43535-B           6.4         Battery voltage / capacity         24 V / 180 Ah           6.5         Battery weight (+/- 5%)         220 kg           Miscellaneous           8.1         Type of drive control         AC				
6.1 Drive motor rating \$2.60 min 1.50 kW 6.2 Lift motor rating at \$3.15% 3 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43535-B 6.4 Battery voltage / capacity 24 V / 180 Ah 6.5 Battery weight (+/- 5%) 220 kg  Miscellaneous 8.1 Type of drive control AC	0.10			Electic magnetic
6.2 Lift motor rating at \$3 15% 3 kW 6.3 Battery according to DIN 43531/35/36 A, B, C DIN 43535-B 6.4 Battery voltage / capacity 24 V / 180 Ah 6.5 Battery weight (+/- 5%) 220 kg  Miscellaneous 8.1 Type of drive control AC	6.1	-		1 50 kW
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  DIN 43535-B  24 V / 180 Ah  220 kg  AC				
6.4       Battery voltage / capacity       24 V / 180 Ah         6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
6.5       Battery weight (+/- 5%)       220 kg         Miscellaneous         8.1       Type of drive control       AC				
Miscellaneous  8.1 Type of drive control  AC				
8.1 Type of drive control AC	0.0			220 kg
**	8.1			A.C.
		7		

## ES 616 LI - Dimensional drawing



## Characteristics of masts and residual capacities

Central Cylinder Simplex (CCS)		CCS 15	CCS 17
h1 - Mast lowered height	mm	1953	2203
h2 - Mast free lift	mm	1506	1756
h3 - Mast lifting height	mm	1506	1756
h4 - Mast extended height	mm	1960	2210
Residual capacity at max height	kg	1600	1600

Full Visibility Duplex (FVD)		FVD 29	FVD 34	FVD 38
h1 - Mast lowered height	mm	1953	2203	2403
h3 - Mast lifting height	mm	2936	3436	3836
h4 - Mast extended height	mm	3390	3890	4290
Residual capacity at max height	ka	1350	1100	850

Free Lift Duplex (FLD)		FLD 29	FLD 34
h1 - Mast lowered height	mm	1953	2203
h2 - Mast free lift	mm	1506	1756
h3 - Mast lifting height	mm	2931	3431
h4 - Mast extended height	mm	3385	3885
Residual capacity at max height	kg	1350	1100

Free Lift Triplex (FLT)		FLT 42	FLT 47	FLT 54
h1 - Mast lowered height	mm	1911	2071	2315
h2 - Mast free lift	mm	1466	1626	1880
h3 - Mast lifting height	mm	4246	4726	5460
h4 - Mast extended height	mm	4723	5203	5895
Residual capacity at max height	kg	670	500	450





## **Head Office**

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