Technical sheet:

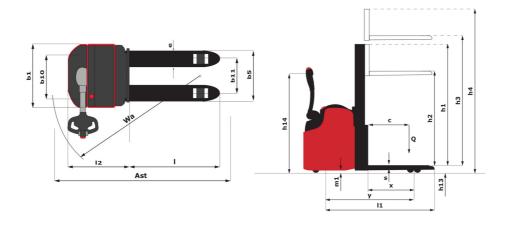
ES 616 LI (5PTS)





			2301021(3113) 8.8	ated on Adgust 12, 2020 at 0.041 W
1.2 Power soutce		Technical characteristics		
1.4 Operator type	1.1	Manufacturer		Manitou
1.1	1.2	Model Name		ES 616 LI (5pts)
1.5 Max. capacily c 60 mm 1.6 Load center of gravity c 60 mm 1.8 Pistenier fron Load backrest to center of rear axie x 72 mm 1.9 Wheelbase y 1333 mm 2.1 Service weight 11280 kg 11280 kg 2.2 Weight on front axie (Unladen) 1070 kg / 1855 kg 1270 kg / 1855 kg 2.3 Windelbase 5 Polyurethane 3.1 Tiss typ 4 / 122 c 68 905 kg / 375 kg 3.1 Tiss typ 4 / 122 c 68 2 / 120 x 54 3.2 Number of databilizer wheels / Size of the stabilizer wheels 5 2 / 120 x 54 3.5 Number of front wheels / rear wheels 1 9 / 120 x 54 3.5 Number of front wheels / rear wheels 1 9 / 120 x 54 3.5 Number of front wheels / rear wheels 1 9 / 120 x 54 3.5 Number of front wheels / rear wheels 1 9 / 120 x 54 3.6 Font wheel gauge 5 1 0 4	1.3	Power source		Electrical
1.0 Load coestret of gravity C	1.4	Operator type		Pedestrian
1.9 Winesibase	1.5	Max. capacity	Q	1600 kg
1.9 Wheelbase Wheelbase	1.6	Load center of gravity	c	600 mm
Neight Service weight 128 kg 12	1.8	Distance from Load backrest to center of rear axle	X	729 mm
2.1 Senice weight 1280 kg 2.2 Weight on front ate (Unladen) 1070 kg / 1855 kg 2.3 Weight on front ate (Unladen) / sear axie (Unladen) 905 kg / 375 kg 3.1 Tires type Polywerhane 3.3 Number of load wheels / Size of load wheels 4 / 82 x 68 3.4 Number of dishilizer wheels / Size of the stabilizer wheels 2 / 120 x 54 3.5 Number of forth weels / Size of drive wheels 3 / 4 3.6 Front wheel gauge bil 1 380 mm 4.6 Initial lift bil 0 558 mm 4.15 Font height in low position bil 1 380 mm 4.6 Initial lift bil 1 180 mm 4.17 Fork height in low position bil 3 80 mm 4.19 Overall length bil 3 80 mm 4.19 Overall width bil 3 80 mm 4.19 Overall width bil 3 80 mm 4.21 Fork section / width / length bil 4 80 mm 4.22 Forks section / width / length </td <td>1.9</td> <td>Wheelbase</td> <td>у</td> <td>1393 mm</td>	1.9	Wheelbase	у	1393 mm
		Weight		
2.3 Weight on front axie (Unladen) / rear axie (Unladen) 905 kg / 375 kg Wheels Wheels Wheels Polymethane 3.3 Number of Index wheels / Size of Inod wheels 4 / 82 / 68 3.4 Number of Index wheels / Size of the stabilizer wheels 2 / 120 x 54 3.5 Number of forth weels / Far wheels 3 / 4 3.5.2 Number of forth weels / Size of drive wheels b10 558 mm 3.6 Front wheel gauge b10 558 mm 3.7 Rear wheel gauge b11 380 mm 4.15 Fork height in low position h13 86 mm 4.19 Overall length 11 1995 mm 4.19 Overall width b1 800 mm 4.19 Overall width b1 800 mm 4.21 Overall width b1 800 mm 4.22 Fork carriage width b1 800 mm 4.22 Fork section / width / length s / e/1 60 mm / 185 mm / 115 4.24 Fork carriage width b2 700 mm <	2.1	Service weight		1280 kg
	2.2	Weight on front axle (laden) / rear axle (laden)		1070 kg / 1855 kg
3.1 Tires type Polyuerthane 3.3 Number of load wheels / Size of the stabilizer wheels 4 / 8 / 2 x 68 3.5 Number of front wheels / rear wheels 3 / 4 3.5.2 Number of front wheels / Size of drive wheels 3 / 4 3.5.2 Number of drive wheels / Size of drive wheels 3 / 4 3.5.2 Number of drive wheels / Size of drive wheels 10 558 mm 3.6 Forth wheel gauge b10 558 mm 3.7 Rear wheel gauge b11 380 mm 4.15 Fork height in low position h13 86 mm 4.19 Overall length 11 1995 mm 4.19 Overall width b1 80 mm 4.20 Length of face of forks 12 846 mm 4.21 Fork section / width / length 5 / e 60 mm / 185 mm / 116 4.22 Fork section / width / length 5 / e 60 mm / 185 mm / 116 4.24 Fork section / width / length 5 / e 60 mm / 185 mm / 116 4.23 A sile width for goot x 2000 crossways A st <td>2.3</td> <td>Weight on front axle (Unladen) / rear axle (Unladen)</td> <td></td> <td>905 kg / 375 kg</td>	2.3	Weight on front axle (Unladen) / rear axle (Unladen)		905 kg / 375 kg
3.3 Number of load wheels / Size of the stabilizer wheels 4 / 82 x 68 3.4 Number of stabilizer wheels / Size of the stabilizer wheels 3 / 4 3.5 Number of drive wheels / Size of drive wheels 3 / 4 3.6 Front wheel gauge b10 555 mm 3.6 Front wheel gauge b11 8380 mm 6. Initial lift h5 110 mm 4.6 Initial lift h5 110 mm 4.15 Fork height in low position h13 86 mm 4.9 Overall length 11 1995 mm 4.20 Length to face of forks 12 846 mm 4.21 Overall width b1 800 mm 4.22 Forks section / width / length s / e/1 60 mm / 185 mm / 185 4.24 Fork carriage width s / e/1 60 mm / 185 mm / 185 4.24 Fork carriage width s / e/1 60 mm / 185 mm / 185 4.34 Alsie width for pallet Engthways Ast 2 239 mm 4.35 Alsie width for soot x 1200 crossways Ast 2 24 mm 4.9 Height tiller min. / max.		Wheels		
3.4 Number of stabilizer wheels / Size of the stabilizer wheels 2 / 120 x 54 3.5 Number of front wheels / Size of drive wheels 3 / 4 3.6 Front wheel gauge b10 558 mm 3.7 Bear wheel gauge b10 558 mm 4.6 Initial lift h5 110 mm 4.15 Fork height in low position h13 86 mm 4.19 Overall length h13 86 mm 4.20 Length to face of forks 12 846 mm 4.21 Overall width h1 800 mm 4.22 Fork section / width / length 5 / 2 846 mm 4.22 Fork section width / length 5 / 2 60 mm / 185 mm / 115 4.24 Fork carriage width 5 / 2 60 mm / 185 mm / 115 4.24 Fork carriage width for pallet 1000 x 1200 crossways Ast 2 / 24 mm 4.23 Alsie width for pallet 1000 x 1200 crossways Ast 2 / 24 mm 4.24 Aisle width for pallet 1000 x 1200 crossways Ast 2 / 20 mm / 185 mm / 135 mm 5.1	3.1	Tires type		Polyurethane
3.5.2 Number of front wheels / Size of drive wheels 3 / 4 / 4 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2	3.3	Number of load wheels / Size of load wheels		4 / 82 x 68
3.5.2 Number of drive wheels / Size of drive wheels 1/230x70 3.6 Front wheel gauge b10 558 mm 3.7 Rear wheel gauge b11 380 mm Dimensions 4.6 Initial lift h5 110 mm 4.15 Fork height in low position h13 86 mm 4.19 Overall length l1 1995 mm 4.20 Length of face of forks l2 846 mm 4.21 Overall width s/e /l 60 mm / 185 mm / 115 4.22 Fork section / width / length s/e /l 60 mm / 185 mm / 115 4.24 Fork carriage width s/e /l 60 mm / 185 mm / 115 4.24 Fork carriage width s/e /l 60 mm / 185 mm / 115 4.32 Ground clearance at centre of wheelbase m2 24 mm 4.33 Aisle Width for 800 x 1200 crossways Ast 2399 mm 4.34 Aisle width for 800 x 1200 crossways Ast 2402 mm 4.35 Tuming radius M8 15 / y h / y h 5.1 Travel speed (laden / unladen) 0.18 m / y h / y h 0.18 m /	3.4	Number of stabilizer wheels / Size of the stabilizer wheels		2 / 120 x 54
3.6 Front wheel gauge 558 mm 3.7 Rear wheel gauge bit 380 mm 4.6 Initial lift h5 110 mm 4.15 Fork height in low position h13 86 mm 4.19 Overall length 11 195 mm 4.20 Length to face of forks 12 846 mm 4.21 Overall width bit 800 mm 4.22 Fork section / width / length s / e / I 60 mm / 185 mm / 115 4.24 Fork section / width / length b3 70 mm 4.22 Fork carriage width b3 70 mm 4.23 Ground clearance at centre of wheelbase m2 2 4 mm 4.33 Aisle width for 800 x 1200 pallet lengthways Ast 202 mm 4.34 Aisle width for 800 x 1200 pallet lengthways Ast 202 mm 4.9 Height tiller min. / max. h14 / h14 750 mm / 1250 m 5.1 Travel speed (laden / unladen) 0.18 m/s / 0.30 m 5.2 Lifting speed (laden / unladen) 0.18 m/s / 0.30 m 5.3 Max Gradeability (laden / unladen) 0.18 m/s / 0.	3.5	Number of front wheels / rear wheels		3 / 4
3.7 Rear wheel gauge bit1 380 mm 4.6 Initial lift h5 110 mm 4.15 Fook height in low position h13 86 mm 4.19 Overall length 11 1995 mm 4.20 Length to face of focks 12 846 mm 4.21 Overall width bt 8800 mm 4.22 Fock section / width / length s / e / I 60 mm / 185 mm / 115 4.24 Fock camage width 53 700 mm / 185 mm / 115 4.24 Fock camage width 53 700 mm / 185 mm / 115 4.24 Fock camage width for poll x 1200 crossways Ast 230 mm 4.33 Aisle Width for pollets 1000 x 1200 crossways Ast 240 mm 4.34 A leight liller min. / max. Ma 1597 mm 4.39 Tuming radius Ma 1597 mm 5.1 Taxel speed (laden / unladen) Ma 1597 mm 5.2 Taxel speed (laden / unladen) 0.18 m/s / 0.30 m 5.2 Taxel speed (laden / unladen) 0.18 m/s	3.5.2	Number of drive wheels / Size of drive wheels		1/230x70
Dimensions	3.6	Front wheel gauge	b10	558 mm
Dimensions	3.7	Rear wheel gauge	b11	380 mm
4.15 Fork height in low position h13 86 mm 4.19 Overall length 11 1995 mm 4.20 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 / 115 4.24 Fork carriage width b3 700 mm 4.32 Ground clearance at centre of wheelbase a5 700 mm 4.33 Aisle Width for pallets 1000 x 1200 crossways Ast 2399 mm 4.34 Aisle width for 800 x 1200 pallet lengthways Ast 2402 mm 4.35 Turning radius Ma 1597 mm 4.9 Height tiller min. / max. Wa 1597 mm 4.9 Height tiller min. / max. Wa 1597 mm 5.1 Tavel speed (laden / unladen) Wa 6 km/h / 6 km/h 5.2 Lifting speed (laden / unladen) 0.18 m/s / 0.30 m 5.3 Lowering speed (laden / unladen) 0.27 m/s / 0.32 m 5.1 Service brake Electro magnetic Engine 1.50 kW <t< td=""><td></td><td></td><td></td><td></td></t<>				
4.15 Fork height in low position h13 86 mm 4.19 Overall length 11 1995 mm 4.20 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 / 115 4.24 Fork carriage width b3 700 mm 4.32 Ground clearance at centre of wheelbase a5 700 mm 4.33 Aisle Width for pallets 1000 x 1200 crossways Ast 2399 mm 4.34 Aisle width for 800 x 1200 pallet lengthways Ast 2402 mm 4.35 Turning radius Ma 1597 mm 4.9 Height tiller min. / max. Wa 1597 mm 4.9 Height tiller min. / max. Wa 1597 mm 5.1 Tavel speed (laden / unladen) Wa 6 km/h / 6 km/h 5.2 Lifting speed (laden / unladen) 0.18 m/s / 0.30 m 5.3 Lowering speed (laden / unladen) 0.27 m/s / 0.32 m 5.1 Service brake Electro magnetic Engine 1.50 kW <t< td=""><td>4.6</td><td>Initial lift</td><td>h5</td><td>110 mm</td></t<>	4.6	Initial lift	h5	110 mm
4.19 Overall length 11 1995 mm 4.20 Length to face of forks 12 846 mm 4.21 Overall width b1 800 mm 4.22 Forks section / width / length 5 / 21 60 mm / 185 mm / 115 4.24 Fork carriage width b3 700 mm 4.32 Ground clearance at centre of wheelbase m2 24 mm 4.33 A isle Width for pallets 1000 x 1200 crossways Ast 2399 mm 4.34 A isle width for 800 x 1200 pallet lengthways Ast 2402 mm 4.35 Turning radius Wa 1597 mm 4.9 Height tiller min. / max. h14 / h14 750 mm / 1250 m 4.9 Height diller min. / max. h14 / h14 750 mm / 1250 m 5.1 Travel speed (laden / unladen) 5 6 Km/h / 6 Km/h 5.2 Lifting speed (laden / unladen) 5 0.18 m/s / 0.30 m 5.3 Lowering speed (laden / unladen) 7 % / 10 % 0.27 m/s / 0.22 m 5.1 Engine 5 6 6 1.50 kW 6.1 Drive motor rating \$2.50 min 1.50 kW				86 mm
4.20 Length to face of forks 12 846 mm 4.21 Overall width b1 800 mm 4.22 Forks section / width / length \$ / e / l 60 mm / 185 mm / 185 4.24 Fork carriage width b3 700 mm 4.22 Ground clearance at centre of wheelbase m2 24 mm 4.33 Alsie Width for pallets 1000 x 1200 crossways Ast 2399 mm 4.34 Alsie width for 800 x 1200 pallet lengthways Ast 2402 mm 4.35 Tuming radius Ma 1597 mm 4.9 Height iller 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 5.3 Lowering speed (laden / unladen) 0.18 m/s / 0.30 m 5.3 Lowering speed (laden / unladen) 0.18 m/s / 0.30 m 5.8 Max Gradeability (laden / unladen) 7 % / 10 % 5.8 Service brake Electromagnetic 6.1 Drive motor rating \$2.50 min 3 kW 6.2 Lift motor rating \$2.50 min 3 kW			I1	1995 mm
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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				
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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				
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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.
9.4 Sound level at the driver's par according to DIM 12.052	8.4	Sound level at the driver's ear according to DIN 12 053		65 dB

ES 616 LI (5pts) - 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

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	1300	1000

Free Lift Triplex (FLT)	FLT 42	
h1 - Mast lowered height	mm	1911
h2 - Mast free lift	mm	1466
h3 - Mast lifting height	mm	4246
h4 - Mast extended height	mm	4723
Residual capacity at max height	kg	600





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