Technical sheet:

## **ER 12**



Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	Q c x y y b10 b11 h7 l1 l2 b1	Manitou ER 12 Electrical - Lead Seated 1200 kg 600 mm 335 mm 1378 mm  2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm  1077 mm 2413 mm	
Power source  Operator type  Max. capacity Load center of gravity Load distance, centre of drive axle to fork  Wheelbase  Weight Service weight  Wheels Tires type  Number of fload wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions  Seat height/stand height Overall length Length to face of forks Overall width Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1	Electrical - Lead Seated 1200 kg 600 mm 335 mm 1378 mm  2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm	
Operator type  Max. capacity  Load center of gravity  Load distance, centre of drive axle to fork  Wheelbase  Weight  Service weight  Wheels  Tires type  Number of fload wheels - Size of drive wheels  Number of load wheels - Size of load wheels  Number of front wheels / rear wheels  Front wheel gauge  Dimensions  Seat height/stand height  O verall length  Length to face of forks  O verall width  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel ams/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  A isle width for 1000 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	b10 b11 h7 l1	Seated 1200 kg 600 mm 335 mm 1378 mm  2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm	
Max. capacity Load center of gravity Load center of gravity Load center of gravity  Load distance, centre of drive axle to fork Wheelbase Weight Service weight Wheels Tires type  Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of owehead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1	1200 kg 600 mm 335 mm 1378 mm  2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm  1077 mm 2413 mm	
Load center of gravity Load distance, centre of drive axle to fork Wheelbase Weight Service weight Wheels Tires type Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Pimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1	600 mm 335 mm 1378 mm  2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm  1077 mm 2413 mm	
Load distance, centre of drive axle to fork  Wheelbase  Weight Service weight Wheels Tires type  Number of drive wheels - Size of drive wheels Number of foront wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge  Pimensions Seat height/stand height Overall length Length to face of forks Overall width Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width owr forks min. / max. Ground clearance at centre of wheelbase Aisle width for 800 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1	335 mm 1378 mm 2580 kg  Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm  1077 mm 2413 mm	
Weight Service weight Wheels Tires type Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels - Size of load wheels Number of front wheels / Front wheels Front wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 800 x 1200 pallet lengthways Turning radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1 l2	1378 mm  2580 kg  Vulkollan  1 x 355 x 155  2 x 220 x 85  1 / 2  0 mm  995 mm  1077 mm  2413 mm	
Weight Service weight Wheels Tires type 2. Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width / length Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Turning radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b10 b11 h7 l1	2580 kg  Vulkollan  1 x 355 x 155  2 x 220 x 85  1 / 2  0 mm  995 mm  1077 mm  2413 mm	
Service weight  Wheels  Tires type  Number of drive wheels - Size of drive wheels  Number of load wheels - Size of load wheels  Number of front wheels / rear wheels  Front wheel gauge  Rear wheel gauge  Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Wheels Tires type  Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Forks section / width / length Signariage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	h7 I1 I2	Vulkollan 1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Tires type  Number of drive wheels - Size of drive wheels  Number of load wheels - Size of load wheels  Number of front wheels / rear wheels  Front wheel gauge Rear wheel gauge  Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Number of drive wheels - Size of drive wheels Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	h7 I1 I2	1 x 355 x 155 2 x 220 x 85 1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Number of load wheels - Size of load wheels Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	h7 I1 I2	2 x 220 x 85 1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Number of front wheels / rear wheels Front wheel gauge Rear wheel gauge Dimensions  Seat height/stand height Overall length Length to face of forks Overall width Forks section / width / length Fork section / width / length South Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Aisle width for 800 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	h7 I1 I2	1 / 2 0 mm 995 mm 1077 mm 2413 mm	
Front wheel gauge  Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	0 mm 995 mm 1077 mm 2413 mm	
Rear wheel gauge  Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	995 mm 1077 mm 2413 mm	
Rear wheel gauge  Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	1077 mm 2413 mm	
Dimensions  Seat height/stand height  Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	h7 I1 I2	1077 mm 2413 mm	
Overall length  Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	l1 l2	2413 mm	
Overall length Length to face of forks Overall width Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Aisle width for 800 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	l1 l2		
Length to face of forks  Overall width  Forks section / width / length  Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)		1263 mm	
1 Overall width 2 Forks section / width / length 3 Fork carriage ISO 2328 (class/form) A/B 6 Distance between wheel arms/loading surfaces 1.1 Width over forks min. / max. 2 Ground clearance at centre of wheelbase 3 Aisle width for 1000 x 1200 pallet lengthways 4 Aisle width for 800 x 1200 pallet lengthways 5 Tuming radius 7 Height of overhead guard (cabin) Performances Travel speed (laden / unladen)		1263 mm	
Forks section / width / length Fork carriage ISO 2328 (class/form) A/B Distance between wheel arms/loading surfaces Width over forks min. / max. Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Aisle width for 800 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	U I	1120 mm	
Fork carriage ISO 2328 (class/form) A/B  Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	s/e/I	40 mm x 100 mm / 1150 mm	
Distance between wheel arms/loading surfaces  Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)		2A	
Width over forks min. / max.  Ground clearance at centre of wheelbase  Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	b4	900 mm	
Ground clearance at centre of wheelbase Aisle width for 1000 x 1200 pallet lengthways Aisle width for 800 x 1200 pallet lengthways Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	b5	316 mm / 697 mm	
Aisle width for 1000 x 1200 pallet lengthways  Aisle width for 800 x 1200 pallet lengthways  Tuming radius  Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	m2	70 mm	
A Aisle width for 800 x 1200 pallet lengthways Turning radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)		2694 mm	
Tuming radius Height of overhead guard (cabin) Performances Travel speed (laden / unladen)	Ast	2751 mm	
Height of overhead guard (cabin)  Performances  Travel speed (laden / unladen)	Wa	1598 mm	
Performances Travel speed (laden / unladen)	h6	2205 mm	
Travel speed (laden / unladen)			
		12.30 km/h / 12.50 km/h	
2 Lifting speed (laden / unladen)		0.50 m/s / 0.65 m/s	
Lowering speed (laden / unladen)		0.58 m/s / 0.55 m/s	
.1 Reach speed (with load / without load)		0.20 m/s / 0.20 m/s	
Gradeability (laden / unladen)	7.50 % / 11.10 %		
0 Service brake		Electric	
Engine			
Drive motor rating S2 60 min		5.90 kW	
2 Lift motor rating at S3 15%		11 kW	
Battery according to DIN 43531/35/36 A, B, C		DIN43531 B	
Battery voltage / capacity		48 V / 310 Ah	
Battery weight (+/- 5%)		730 kg	
Miscellaneous		, 30 kg	
Type of drive control		Electronic	
Oil flow rate for attachments		25 l/min	
Sound level at the driver's ear according to DIN 12 053		57.40 dB	

## ER 12 - Dimensional drawing



## Characteristics of masts and residual capacities

Free Lift Triplex (FLT)		FLT 48	FLT 54	FLT 57	FLT 63	FLT 68
α - Mast/fork carriage tilt, forward	۰	3	3	3	3	3
β - Mast/fork carriage tilt, backward	۰	1	1	1	1	1
h1 - Mast lowered height	mm	2140	2340	2440	2640	2790
h2 - Mast free lift	mm	1600	1800	1900	2100	2250
h3 - Mast lifting height	mm	4800	5400	5700	6300	6800
h4 - Mast extended height	mm	5380	5980	6280	6880	7330
Residual capacity with integrated side shift at max heigth	kg	1200	1200	1200	1000	700





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