Technical book

MSI / MH Range

2 to 5 tons

Semi industrial IC forklifts

MANITOU

MSI : 2000 - 3500 kg

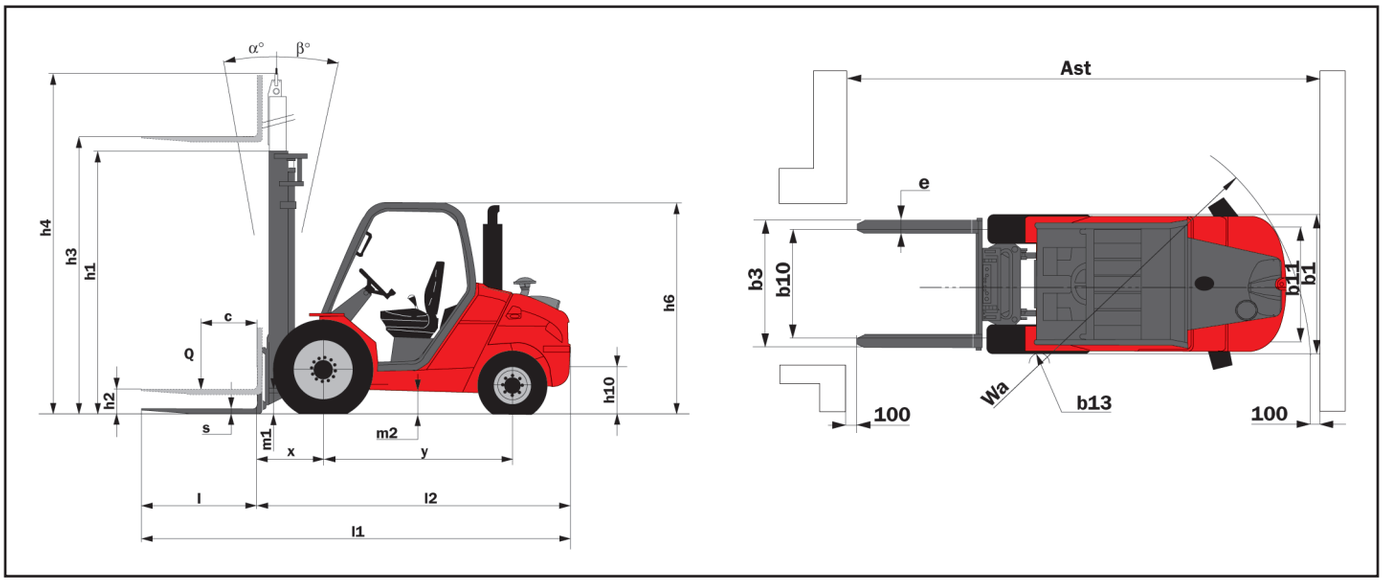
TECHNICAL SPECS

Specifications	1.1	Manufacturer			MANITOU	MANITOU	MANITOU	MANITOU
	1.2	Model			MSI 20	MSI 25	MSI 30	MSI 35
	1.3	Power source			Diesel	Diesel	Diesel	Diesel
	1.4	Driving position			Seated	Seated	Seated	Seated
	1.5	Nominal capacity	Q	t	2	2,5	3,0	3,5
	1.6	Load - centre of gravity	c	mm	500	500	500	500
	1.8	Distance from the load-bearing surface to centre of front axle (1)	x	mm	625	625	630	630
	1.9	Wheelbase	y	mm	1800	1800	1800	1800
Weight	2.1	Operating weight		kg	3770	4070	4704	4845
	2.2	Axle load, with load, front / rear		kg	4911 / 859	5695 / 875	6782 / 922	7430 / 915
	2.3	Axle load, without load, front / rear		kg	1661 / 2109	1633 / 2437	1899/2805	1732/3113
Tyres, frame	3.1	Tyre equipment: cushion (V), superelastic (SE), pneumatic (L)			L	L	L	L
	3.2	Size of front wheels		" or mm	275/70 R22.5	275/70 R22.5	275/70 R22,5	275/70 R22,5
	3.3	Size of rear wheels		" or mm	7.00X12 14PR	7.00X12 14PR	7.00X12 14PR	7.00X12 14PR
	3.5	Number of front wheels (x = drive wheel) / rear wheels			2 x 2	2 x 2	2 x 2	2 x 2
	3.6	Front wheel gauge (middle of wheels)	b10	mm	1046	1046	1046	1046
	3.7	Rear wheel gauge (middle of wheels)	b11	mm	1102	1102	1102	1102
Dimensions	4.1	Tilt of mast forwards / backwards	α / β	deg	10 / 12	10 / 12	10/12	10/12
	4.2	Height mast lowered	h1	mm	2300	2300	2300	2300
	4.3	Free lift	h2	mm	130	130	130	130
	4.4	Lift height	h3	mm	3300	3300	3300	3300
	4.5	Height mast extended	h4	mm	4131	4131	4193	4193
	4.7	Height of overhead guard (cabin)	h6	mm	2105	2105	2105	2105
	4.8	Height of seat	h7	mm	1025	1025	1025	1025
	4.12	Height of towing bar	h10	mm	470	470	470	470
	4.19	Overall lenght	l1	mm	4045	4045	4080	4130
	4.20	Lenght at fork heels	l2	mm	2945	2945	2980	3030
	4.21	Total width (overall)	b1	mm	1323	1323	1323	1323
	4.22	Fork dimensions	s / e / l	mm	40 / 100 / 1100	40 / 100 / 1100	40 / 100 / 1100	45 / 125 / 1100
	4.23	Fork carriage to DIN 15173 A/B			FEM2A	FEM2A	FEM2A	FEM2A
	4.24	Width of fork carriage	b3	mm	1260	1260	1260	1260
	4.31	Ground clearance below mast	m1	mm	270	270	270	270
	4.32	Ground clearance at centre of wheel-base	m2	mm	260	260	260	260
	4.33	Width of aisle for pallet 1000 x 1200 crossways	Ast	mm	4425	4425	4425	4495
	4.34	Width of aisle for pallet 800 x 1200 lengthways	Ast	mm	4625	4625	4625	4695
	4.35	Turning radius	Wa	mm	2600	2600	2635	2665
	4.36	Inner turning radius	b13	mm	150	150	150	150
Performances	5.1	Speed of travel laden / unladen		km/h	20 / 20	20 / 20	20 / 20	20 / 20
	5.2	Speed of raise laden / unladen		m/s	0.4 / 0.5	0.4 / 0.5	0,4 / 0,5	0,4 / 0,5
	5.3	Speed of lowering laden / unladen		m/s	0.6 / 0.5	0.6 / 0.5	0,5 / 0,4	0,4 / 0,3
	5.5	Nominal towing power laden / unladen		N	2280 / 1370	2280 / 1370	2460 / 1260	2640 / 1560
	5.7	Gradeability with / without load		%	33 / 37	31 / 32	24 / 29	29 / 29
	5.10	Service brake			Hydraulic	Hydraulic	Hydraulic	Hydraulic
Motors	7.1	Manufacturer / Type of engine			Kubota V2403 M T E3	Kubota V2403 M T E3	Kubota V2403 M T E3	Kubota V2403 M T E3
	7.2	Power delivery		kW	44	44	44	44
	7.3	Rated speed		tr/min	2700	2700	2700	2700
	7.4	Number of pistons / Cubic capacity		cm3	4/2434	4/2434	4/2434	4/2434
Miscellaneaous	8.1	Power control			Hydraulic	Hydraulic	Hydraulic	Hydraulic
	8.2	Operating pressure for attachments		bar	140	170	185	190
	8.3	Oil flow for attachments		l/min	77	77	77	77
	8.4	Average noise level for the driver (in motion) measured / guaranteed		dB	82	82	82	82

1 - Values with duplex mast

Data is based on standard configurations (forks, mast).
Performance data and dimensions are nominal and subject to tolerances.
Manitou products and their specifications are subject to change without notice.

DIMENSIONAL DRAWINGS



MASTS AND RESIDUAL CAPACITIES

MSI 2,0 & 2,5 T			Total Visibility Duplex									Free Lift Duplex		
			DVT30	DVT33	DVT35	DVT37	DVT40	DVT45	DVT50	DVT55	DVT560	DLL30	DLL33	DLL35
h3*	Lift height	mm	3000	3300	3500	3700	4000	4500	5000	5500	6000	3000	3300	3500
h1	Height mast lowered	mm	2150	2300	2400	2560	2750	3000	3250	3500	3790	2150	2300	2400
h2	Free lift	mm	130	130	130	130	130	130	130	130	130	1393	1543	1643
h4	Height mast extended*	mm	3831	4131	4331	4531	4831	5331	5831	6331	6831	3797	4097	4297
	Residual capacity at max height MSI20 - c=500mm	kg	2000	2000	2000	2000	2000	1800	1500	-	-	2000	2000	2000
	Residual capacity at max height MSI25 - c=500mm	kg	2500	2500	2500	2500	2500	2200	1900	-	-	2500	2500	2500

* Without backrest and Integrated sideshift

MSI 2,0 & 2,5 T			Free Lift Duplex			Free LIft Triplex								
			DLL37	DLL40	DLL45	TLL37	TLL40	TLL43	TLL47	TLL50	TLL55	TLL60	TLL65	TLL70
h3*	Lift height	mm	3700	4000	4500	3700	4000	4300	4700	5000	5500	6000	6600	7000
h1	Height mast lowered	mm	2560	2750	3000	1950	2050	2150	2300	2400	2560	2750	3000	3250
h2	Free lift	mm	1803	1993	2243	1221	1321	1421	1571	1671	1831	2021	2271	2521
h4	Height mast extended*	mm	4497	4797	5297	4469	4769	5069	5469	5769	6269	6769	7269	7769
	Residual capacity at max height MSI20 - c=500mm	kg	2000	2000	1500	2000	2000	2000	1700	1500	1300	1000	-	-
	Residual capacity at max height MSI25 - c=500mm	kg	2500	2500	1900	2500	2500	2400	2100	1900	1500	1500	-	-

* Without backrest and Integrated sideshift

MSI 3,0 & 3,5 T			Total Visibility Duplex									Free Lift Duplex		
			DVT30	DVT33	DVT35	DVT37	DVT40	DVT45	DVT50	DVT55	DVT560	DLL30	DLL33	DLL35
h3*	Lift height	mm	3000	3300	3500	3700	4000	4500	5000	5500	6000	3000	3300	3500
h1	Height mast lowered	mm	2150	2300	2400	2560	2750	3000	3250	3500	3790	2150	2300	2400
h2	Free lift	mm	135	135	135	135	135	135	135	135	135	1396	1546	1646
h4	Height mast extended*	mm	3893	4193	4393	4593	4893	5396	5863	6393	6893	3799	4099	4299
	Residual capacity at max height MSI30 - c=500mm	kg	3000	3000	3000	3000	3000	2600	2400	1900	1500	3000	3000	3000
	Residual capacity at max height MSI35 - c=500mm	kg	35000	3500	3500	3500	3400	3100	3000	-	-	3500	3500	3500

* Without backrest and Integrated sideshift

MSI 3,0 & 3,5 T			Free Lift Duplex			Free LIft Triplex								
			DLL37	DLL40	DLL45	TLL37	TLL40	TLL43	TLL47	TLL50	TLL55	TLL60	TLL65	TLL70
h3*	Lift height	mm	3700	4000	4500	3700	4000	4300	4700	5000	5500	6000	6600	7000
h1	Height mast lowered	mm	2560	2750	3000	2050	2150	2300	2400	2560	2750	3000	3250	3500
h2	Free lift	mm	1806	1996	2246	1297	1397	1547	1647	1807	1997	2247	2497	2747
h4	Height mast extended*	mm	4499	4799	5299	4500	4800	5100	5500	5800	6300	6800	7300	7800
	Residual capacity at max height MSI30 - c=500mm	kg	3000	3000	2600	3000	3000	2800	2600	2400	1900	1500	-	-
	Residual capacity at max height MSI35 - c=500mm	kg	3500	3400	2700	3400	3400	3100	2700	2500	2100	1800	1200	-

* Without backrest and Integrated sideshift

MH : 2000 - 2500 kg

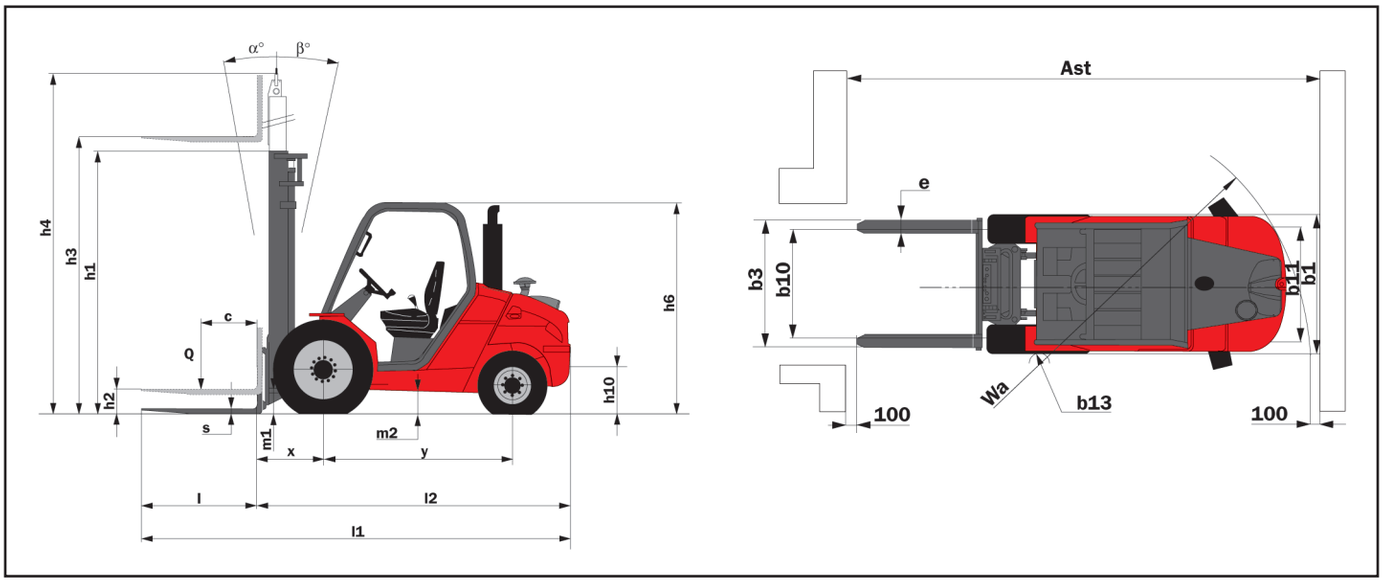
TECHNICAL SPECS

Specifications	1.1	Manufacturer			**MANITOU**	**MANITOU**
	1.2	Model			**MH 20**	**MH 25**
	1.3	Power source			Diesel	Diesel
	1.4	Driving position			Seated	Seated
	1.5	Nominal capacity	Q	t	2000	2500
	1.6	Load - centre of gravity	c	mm	500	500
	1.8	Distance from the load-bearing surface to centre of front axle (1)	x	mm	625	625
	1.9	Wheelbase	y	mm	1800	1800
Weight	2.1	Operating weight		kg	4050	4350
	2.2	Axle load, with load, front / rear		kg	5091 / 864	5812 / 948
	2.3	Axle load, without load, front / rear		kg	1841 / 2114	1750 / 2510
Tyres, frame	3.1	Tyre equipment: cushion (V), superelastic (SE), pneumatic (L)			L	L
	3.2	Size of front wheels		" or mm	280/80 R20 XMCL	280/80 R20 XMCL
	3.3	Size of rear wheels		" or mm	27,10 - 12 IC 30 14PR	27,10 - 12 IC 30 14PR
	3.5	Number of front wheels (x = drive wheel) / rear wheels			4	4
	3.6	Front wheel gauge (middle of wheels)	b10	mm	1450	1450
	3.7	Rear wheel gauge (middle of wheels)	b11	mm	1160	1160
Dimensions	4.1	Tilt of mast forwards / backwards	α / β	deg	10 / 12	10 / 12
	4.2	Height mast lowered	h1	mm	1835	1835
	4.3	Free lift	h2	mm	-	-
	4.4	Lift height	h3	mm	3300	3300
	4.5	Height mast extended	h4	mm	4070	4070
	4.7	Height of overhead guard (cabin)	h6	mm	1990	1990
	4.8	Height of seat	h7	mm	1025	1025
	4.12	Height of towing bar	h10	mm	470	470
	4.19	Overall lenght	l1	mm	4045	4045
	4.20	Lenght at fork heels	l2	mm	2945	2945
	4.21	Total width (overall)	b1	mm	1450	150
	4.22	Fork dimensions	s / e / l	mm	40 / 100 / 1100	40 / 100 / 1100
	4.23	Fork carriage to DIN 15173 A/B			FEM2A	FEM2A
	4.24	Width of fork carriage	b3	mm	1260	1260
	4.31	Ground clearance below mast	m1	mm	270	270
	4.32	Ground clearance at centre of wheel-base	m2	mm	260	260
	4.33	Width of aisle for pallet 1000 x 1200 crossways	Ast	mm	5090	5090
	4.34	Width of aisle for pallet 800 x 1200 lengthways	Ast	mm	5290	5290
	4.35	Turning radius	Wa	mm	2500	2500
	4.36	Inner turning radius	b13	mm	1080	1080
Performances	5.1	Speed of travel laden / unladen		km/h	14 / 14	14 / 14
	5.2	Speed of raise laden / unladen		m/s	0,4 / 0,6	0,6 / 0,6
	5.3	Speed of lowering laden / unladen		m/s	0,6 / 0,5	0,6 / 0,5
	5.5	Nominal towing power laden / unladen		N	3550 / 2190	3550 / 2190
	5.7	Gradeability with / without load		%	57 / 52	50 / 48
	5.10	Service brake			Hydraulic	Hydraulic
Motors	7.1	Manufacturer / Type of engine			Kubota V2403 M T E38	Kubota V2403 M T E38
	7.2	Power delivery		kW	44	44
	7.3	Rated speed		tr/min	1600	1600
	7.4	Number of pistons / Cubic capacity		cm3	4/2434	4/2434
Miscellaneaous	8.1	Power control			Hydraulic	Hydraulic
	8.2	Operating pressure for attachments		bar	125	125
	8.3	Oil flow for attachments		l/min	77	77
	8.4	Average noise level for the driver (in motion) measured / guaranteed		dB	81	81

1 - Values with duplex mast

Data is based on standard configurations (forks, mast).
Performance data and dimensions are nominal and subject to tolerances.
Manitou products and their specifications are subject to change without notice.

DIMENSIONAL DRAWINGS



MASTS AND RESIDUAL CAPACITIES

MH 2,0 & 2,5 T			Total Visibility Duplex						
			DVT27	DVT30	DVT33	DVT35	DVT37	DVT40	DVT45
h3*	Lift height	mm	2730	3030	3330	3530	3730	4030	4530
h1	Height mast lowered	mm	1995	2145	2295	2395	2555	2745	2995
h2	Free lift	mm	130	130	130	130	130	130	130
h4	Height mast extended*	mm	3531	3831	4131	4331	4531	4831	5331
MH20	Residual capacity at max height - c = 500 mm	kg	2000	2000	2000	1800	1600	1500	1100
MH25	Residual capacity at max height - c = 500 mm	kg	2500	2500	2500	1900	1900	1550	1100

* Without backrest and Integrated sideshift

MH 2,0 & 2,5 T			Free Lift Duplex						Free LIft Triplex			
			DLL30	DLL33	DLL35	DLL37	DLL40	DLL45	TLL37	TLL40	TLL43	TLL47
h3*	Lift height	mm	3040	3340	3540	3740	4040	4540	3740	4040	4340	4740
h1	Height mast lowered	mm	2145	2295	2395	2555	2745	2995	1945	2045	2145	2295
h2	Free lift	mm	1388	1538	1638	1798	1988	2238	1216	1316	1416	1566
h4	Height mast extended*	mm	3797	4097	4297	4497	4797	5297	4469	4769	5069	5469
MH20	Residual capacity at max height - c = 500 mm	kg	2000	2000	1800	1600	1500	1100	1600	1500	1200	1000
MH25	Residual capacity at max height - c = 500 mm	kg	2500	2500	1900	1900	1550	1100	1900	1550	1250	1000

* Without backrest and Integrated sideshift

MSI Evolution : 4000 - 5000 kg

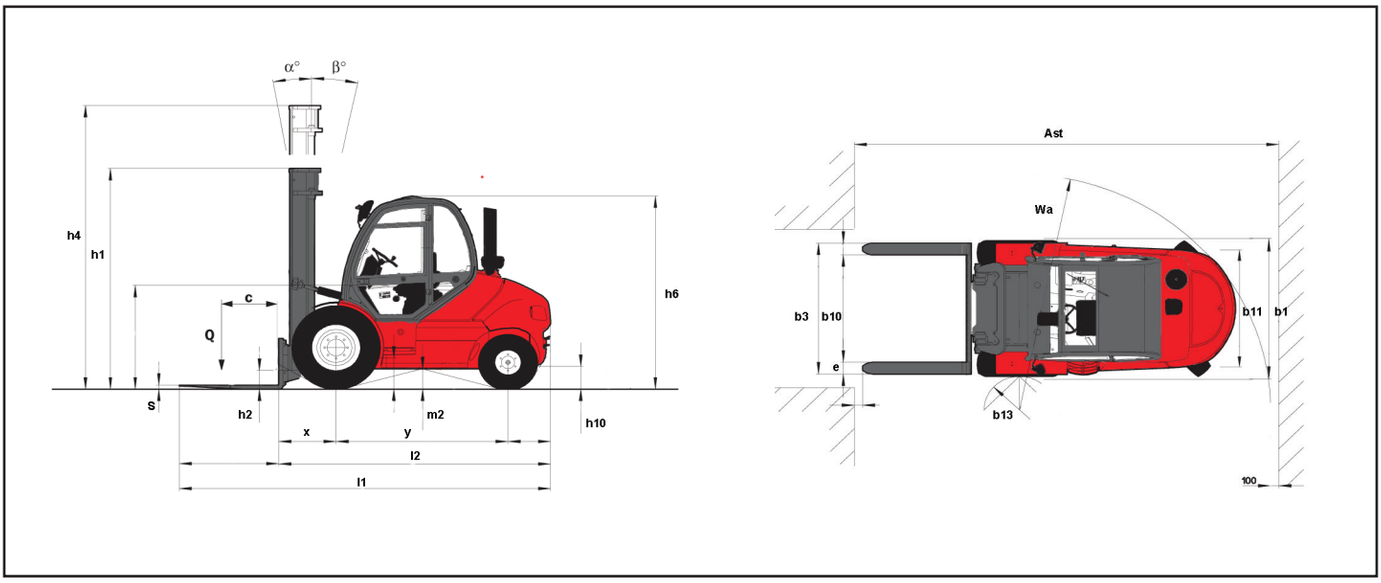
TECHNICAL SPECS

Specifications	1.1	Manufacturer			**MANITOU**	**MANITOU**
	1.2	Model			**MSI 40 T**	**MSI 50 T** –
	1.3	Power source			Diesel	Diesel
	1.4	Driving position			Seated	Seated
	1.5	Nominal capacity	Q	t	4	5
	1.6	Load - centre of gravity	c	mm	500	600
	1.8	Distance from the load-bearing surface to centre of front axle (1)	x	mm	691	701
	1.9	Wheelbase	y	mm	2075	2075
Weight	2.1	Operating weight		kg	6980	8420
	2.2	Axle load, with load, front / rear		kg	9245 / 1735	11467 / 1953
	2.3	Axle load, without load, front / rear		kg	3210 / 3770	3489 / 4931
Tyres, frame	3.1	Tyre equipment: cushion (V), superelastic (SE), pneumatic (L)			L	L
	3.2	Size of front wheels		" or mm	315/70 R22,5	315/70 R22,5
	3.3	Size of rear wheels		" or mm	225/75 R15	225/75 R15
	3.5	Number of front wheels (x = drive wheel) / rear wheels			2x 2	2x 2
	3.6	Front wheel gauge (middle of wheels)	b10	mm	1420	1420
	3.7	Rear wheel gauge (middle of wheels)	b11	mm	1142	1142
Dimensions	4.1	Tilt of mast forwards / backwards	α / β	deg	10 / 12	10 / 12
	4.2	Height mast lowered	h1	mm	2775	2775
	4.3	Free lift	h2	mm	-	-
	4.4	Lift height	h3	mm	3700	3700
	4.5	Height mast extended	h4	mm	4677	4672
	4.7	Height of overhead guard (cabin)	h6	mm	2440	2440
	4.8	Height of seat	h7	mm	1300	1300
	4.12	Height of towing bar	h10	mm	540	540
	4.19	Overall lenght	l1	mm	4494	4584
	4.20	Lenght at fork heels	l2	mm	3294	3384
	4.21	Total width (overall)	b1	mm	1732	1732
	4.22	Fork dimensions	s / e / l	mm	50 / 150 / 1200	60 / 150 / 1200
	4.23	Fork carriage to DIN 15173 A/B			FEM2A	FEM2A
	4.24	Width of fork carriage	b3	mm	1670	1670
	4.31	Ground clearance below mast	m1	mm	185	185
	4.32	Ground clearance at centre of wheel-base	m2	mm	225	225
	4.33	Width of aisle for pallet 1000 x 1200 crossways	Ast	mm	4756	5041
	4.34	Width of aisle for pallet 800 x 1200 lengthways	Ast	mm	4956	5241
	4.35	Turning radius	Wa	mm	2865	2950
	4.36	Inner turning radius	b13	mm	125	125
Performances	5.1	Speed of travel laden / unladen		km/h	22 / 22	22 / 22
	5.2	Speed of raise laden / unladen		m/s	0.6 / 0.6	0.5 / 0.5
	5.3	Speed of lowering laden / unladen		m/s	0.4 / 0.5	0.4 / 0.4
	5.5	Nominal towing power laden / unladen		N	3180 / 2020	3350 / 2420
	5.7	Gradeability with / without load		%	24 / 29	24 / 26
	5.10	Service brake			Hydraulic	Hydraulic
Motors	7.1	Manufacturer / Type of engine			Perkin 1104D-44T	Perkin 1104D-44T
	7.2	Power delivery		kW	55	55
	7.3	Rated speed		tr/min	2200	2200
	7.4	Number of pistons / Cubic capacity		cm3	4/3400	4/3400
Miscellaneaous	8.1	Power control			Hydraulic	Hydraulic
	8.2	Operating pressure for attachments		bar	230	230
	8.3	Oil flow for attachments		l/min	103	103
	8.4	Average noise level for the driver (in motion) measured / guaranteed		dB	81	81

1 - Values with duplex mast

Data is based on standard configurations (forks, mast).
Performance data and dimensions are nominal and subject to tolerances.
Manitou products and their specifications are subject to change without notice.

DIMENSIONAL DRAWINGS



MASTS AND RESIDUAL CAPACITIES

MSI 40 T CDG 500 mm			Total Visibility Duplex							Free Lift Duplex				
			DVT30	DVT33	DVT35	DVT37	DVT40	DVT45	DVT50	DLL30	DLL33	DLL35	DLL37	DLL40
h3*	Lift height	mm	3000	3300	3500	3700	4000	4500	5000	3000	3300	3500	3700	4000
h1	Height mast lowered	mm	2425	2575	2675	2775	2925	3175	3425	2450	2600	2700	2800	2950
h2	Free lift	mm	-	-	-	-	-	-	-	1532	1682	1782	1882	2032
h4	Height mast extended*	mm	3977	4277	4477	4677	4977	5477	5977	3968	4268	4468	4668	4968
	Residual capacity at max height - c = 500 mm	kg	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000

* Without backrest and Integrated sideshift

MSI 40 T CDG 500 mm			Free LIft Triplex							
			TLL37	TLL40	TLL43	TLL45	TLL47	TLL50	TLL55	TLL60
h3*	Lift height	mm	3700	4000	4300	4500	4700	5000	5500	6000
h1	Height mast lowered	mm	2175	2275	2375	2450	2510	2625	2775	2950
h2	Free lift	mm	1258	1358	1458	1533	1593	1708	1858	2033
h4	Height mast extended*	mm	4667	4967	5267	5467	5667	5967	6467	6967
	Residual capacity at max height - c = 500 mm	kg	40000	4000	4000	4000	3800	3700	3500	3400

* Without backrest and Integrated sideshift

MSI 50 T CDG 600 mm			Total Visibility Duplex							Free Lift Duplex				
			DVT30	DVT33	DVT35	DVT37	DVT40	DVT45	DVT50	DLL30	DLL33	DLL35	DLL37	DLL40
h3*	Lift height	mm	3000	3300	3500	3700	4000	4500	5000	3000	3300	3500	3700	4000
h1	Height mast lowered	mm	2425	2575	2675	2775	2925	3175	3425	2450	2600	2700	2800	2950
h2	Free lift	mm	-	-	-	-	-	-	-	1541	1691	1791	1891	2041
h4	Height mast extended*	mm	3972	4272	4472	4672	4972	5472	5972	3969	4269	4469	4669	4969
	Residual capacity at max height - c = 600 mm	kg	5000	5000	5000	5000	5000	4800	4800	5000	5000	5000	5000	5000

* Without backrest and Integrated sideshift

MSI 50 T CDG 600 mm			Free LIft Triplex							
			TLL37	TLL40	TLL43	TLL45	TLL47	TLL50	TLL55	TLL60
h3*	Lift height	mm	3700	4000	4300	4500	4700	5000	5500	6000
h1	Height mast lowered	mm	2175	2275	2375	2450	2510	2625	2775	2950
h2	Free lift	mm	1263	1363	1463	1538	1598	1713	1863	2038
h4	Height mast extended*	mm	4662	4962	5262	5462	5662	5962	6462	6962
	Residual capacity at max height - c = 600 mm	kg	4900	4900	4900	4800	4600	4400	3800	3100

* Without backrest and Integrated sideshift

Your nearest MANITOU dealer :

Head office
B.P. 249 - 430 rue de l'Aubinière - 44158 Ancenis Cedex - France
Tel: 00 33 (0)2 40 09 10 11 - Fax: 00 33 (0)2 40 09 10 97
www.manitou.com

This brochure describes versions and configuration options for Manitou products which may be fitted with different equipment. The equipment described in this brochure may be standard, optional or not available depending on version. Manitou reserves the right to change the specifications shown and described at any time and without prior warning. The manufacturer is not liable for the specifications given. For more information, contact your Manitou dealer. Non-contractual document. Product descriptions may differ from actual products. List of specifications is not comprehensive. The logos and visual identity of the company are the property of Manitou and may not be used without authorisation. All rights reserved. The photos and diagrams contained in this brochure are provided for information only.
MANITOU BF SA - Limited company with board of directors - Share capital: 39,547,824 euros - 857 802 508 RCS Nantes

FT080_EN_B_0314_MSI_MH.pdf