



# MP16-22

SPEC SHEET

1,600 - 2,200 kg

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MP Series

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Powered Pallet Truck

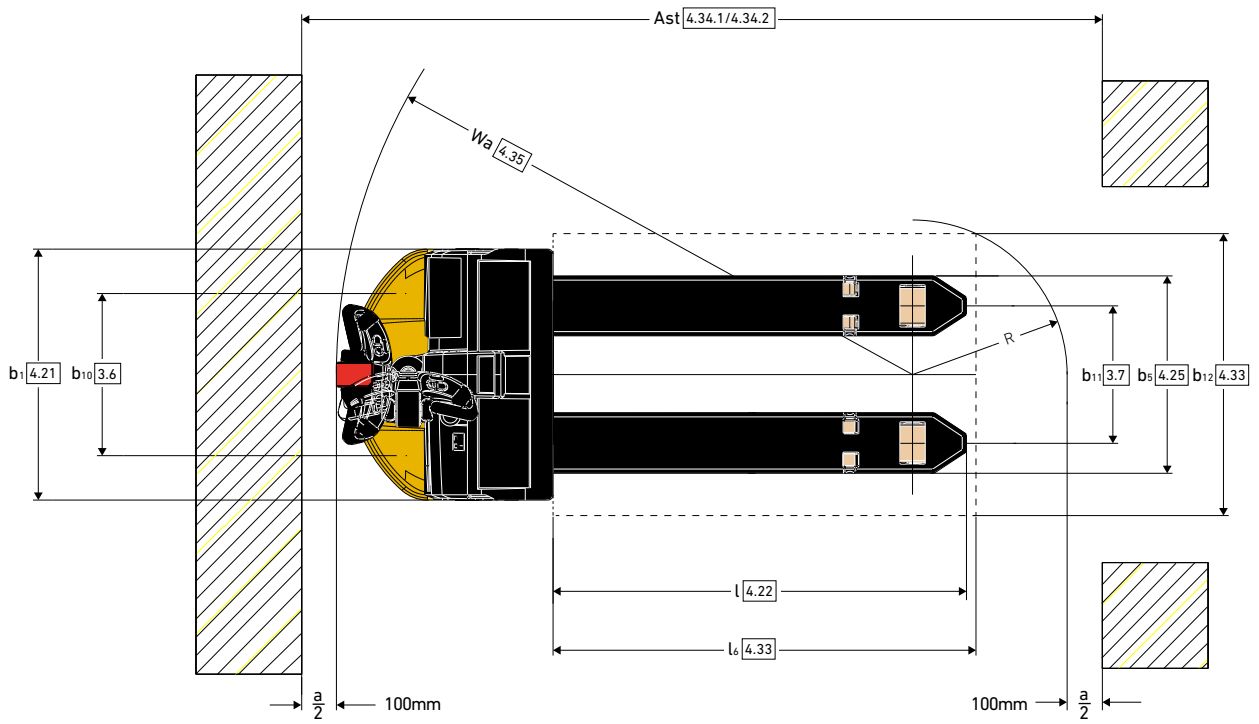
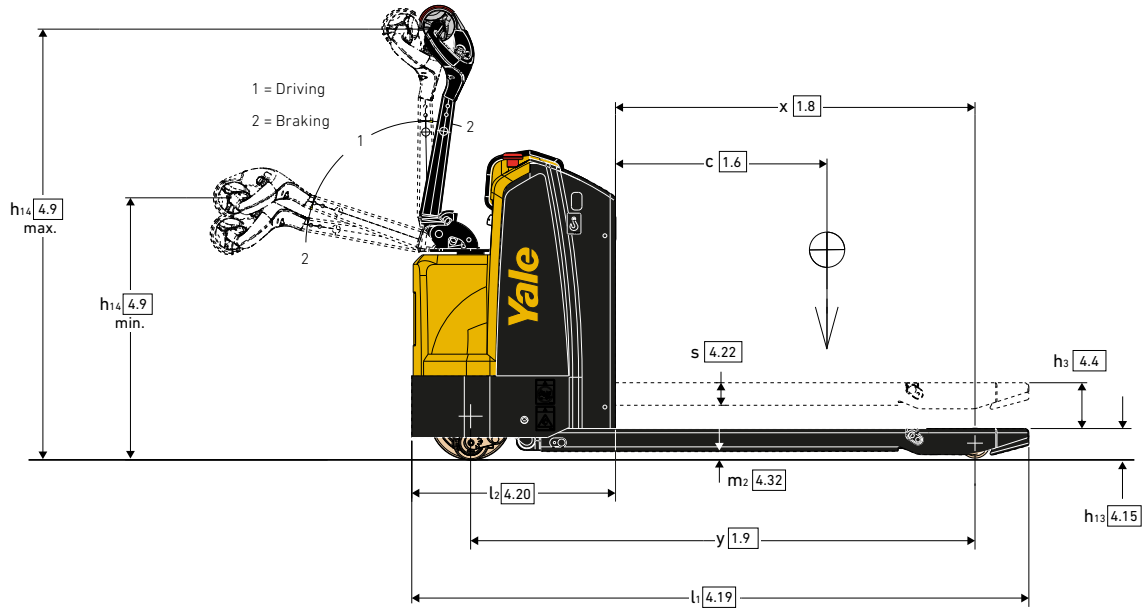


# TRUCK DIMENSIONS – MP SERIES

$$A_{st} = Wa + R + a$$

$$A_{st} = Wa + \sqrt{(l_6 - x)^2 + (b_{12} / 2)^2} + a$$

$$a = 200$$



## VDI 2198 – GENERAL SPECIFICATIONS – MP SERIES

		Yale					
		MP16	MP18	MP20	MP22		
<b>GENERAL</b>	1.1	Manufacturer					
	1.2	Model designation					
	1.3	Drive	Electric (battery)				
	1.4	Operator type	Pedestrian				
	1.5	Rated capacity/Rated load	Q (t)	1.6	1.8	2.0	2.2
	1.6	Load centre distance <sup>(1)</sup>	c (mm)	600			
	1.8	Load distance, centre of drive axle to fork <sup>(1)</sup>	x (mm)	955			
	1.9	Wheelbase <sup>(1)</sup>	y (mm)	1368	1440		
	<b>WEIGHT</b>	2.1	Service weight <sup>(1)(2)</sup>	kg	545		632
2.2		Axle loading, laden front/rear <sup>(1)</sup>	kg	841 / 1304	893 / 1452	983 / 1649	1032 / 1800
2.3		Axle loading, unladen front/rear <sup>(1)</sup>	kg	425 / 120		489 / 143	
<b>TYRES</b>	3.1	Tyres front/rear	Polyurethane				
	3.2	Tyre size, front	ø (mm x mm)	250 x 75			
	3.3	Tyre size, rear	ø (mm x mm)	85 x 110			
	3.4	Additional wheels (dimensions)	ø (mm x mm)	100 x 40			
	3.5	Wheels, number front/rear (x = driven wheels)		1x + 2 / 2			
	3.6	Tread, front	b <sub>10</sub> (mm)	461			
	3.7	Tread, rear	b <sub>11</sub> (mm)	390			
<b>DIMENSIONS</b>	4.4	Lift	h <sub>3</sub> (mm)	130			
	4.9	Height drawbar in driving position min./max.	h <sub>14</sub> (mm)	744 / 1221			
	4.15	Height, lowered	h <sub>13</sub> (mm)	85			
	4.19	Overall length <sup>(1)</sup>	l <sub>1</sub> (mm)	1734	1806		
	4.20	Length to face of forks <sup>(1)</sup>	l <sub>2</sub> (mm)	578	650		
	4.21	Overall width	b <sub>1</sub> / b <sub>2</sub> (mm)	712			
	4.22	Fork dimensions <sup>(1)</sup>	s/e/l (mm)	64 / 172 / 1156			
	4.25	Forks spread	b <sub>5</sub> (mm)	560			
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	21			
	4.33	Load dimension b <sub>12</sub> x l <sub>6</sub>	b <sub>12</sub> x l <sub>6</sub>	-			
	4.34.1	Aisle width for pallets 1000mm x 1200mm crossways <sup>(1)</sup>	Ast (mm)	2337	2409		
4.34.2	Aisle width for pallets 800mm x 1200mm lengthwise <sup>(1)</sup>	Ast (mm)	2204	2276			
4.35	Turning radius <sup>(1)</sup>	Wa (mm)	1535	1607			
<b>PERFORMANCE</b>	5.1	Travel speed, laden/unladen	km/h	6 / 6			
	5.1.1	Travel speed, laden/unladen, backwards	km/h	6 / 6			
	5.2	Lift speed, laden/unladen	m/s	0.04 / 0.05			
	5.3	Lowering speed, laden/unladen	m/s	0.09 / 0.04			
	5.7	Gradeability, laden/unladen	%	5.5 / 15	5 / 15	4.5 / 15	4 / 15
	5.8	Max. gradeability, laden/unladen <sup>(3)</sup>	%	10 / 20 (12 / 24)	9 / 20 (10.8 / 24)	8 / 20 (9.6 / 24)	7.5 / 20 (9 / 24)
	5.10	Service brake		Electro Magnetic			
<b>ELECTRIC</b>	6.1	Drive motor S2 60 minute rating	kW	1.25			
	6.2	Lift motor, S3 15% rating	kW	1.2			
	6.3	Battery according to DIN 43531/35/36 A,B,C, no		B			
	6.4	Battery voltage/nominal capacity K5 <sup>(1)</sup>	(V)/(Ah)	24 / 250 <sup>(4)</sup>	24 / 250 <sup>(4)</sup>	24 / 375 <sup>(5)</sup>	24 / 375 <sup>(6)</sup>
	6.5	Battery weight <sup>(1)(2)</sup>	kg	212		288	
	6.6	Energy consumption according to DIN EN 16796	kWh/h	0.32	0.36		0.41
	6.7	Turnover output according to VDI 2198	l/h	89	110		120
	6.8	Turnover efficiency according to VDI 2198	t/kWh	112	117		119
8.1	Type of drive unit		AC-Controller				
10.7	Sound pressure level at the driver's seat	dB (A)	< 70				

On MP16 / MP18 available batteries 150Ah, 210Ah.

(1) See "Batteries table"

(2) These values may vary of +/- 5%

(3) Values in bracket are Optional

(4) Available batteries 150Ah, 210Ah and 50Ah, 60Ah, 100Ah, 120Ah Li-Ion

(5) Available batteries 150Ah, 210Ah, 250Ah, 315Ah and 50Ah, 60Ah, 100Ah, 120Ah, 200Ah Li-Ion

(6) Available batteries 210Ah, 250Ah, 315Ah and 50Ah, 100Ah, 200Ah Li-Ion

## BATTERY DIMENSIONS – MP SERIES

bs = 520MM - 560MM - 670MM

### Battery 375 / 315 AH

GENERAL			bs = 520MM - 560MM - 670MM										
			400	500	600	700	800	400	500	600	700	800	
GENERAL	1.6	Load centre distance	c (mm)	400	500	600	700	800	400	500	600	700	800
	1.8	Load distance, centre of drive axle to fork	x (mm)	599	805	955	1199	1399	599	805	955	1199	1399
	1.9	Wheelbase	y (mm)	1084	1290	1440	1684	1884	1084	1290	1440	1684	1884
WEIGHT	2.1	Service weight <sup>(1)</sup>	kg	612	623	632	646	657	456	467	476	490	501
	2.2	Axle loading, laden <sup>(2)</sup>	kg (front)	809	944	983	1106	1166	753	756	759	763	767
			kg (rear)	1803	1679	1649	1540	1491	1703	1711	1717	1727	1734
	2.3	Axle loading, unladen	kg (front)	441	471	489	513	529	140	143	146	150	154
			kg (rear)	171	152	143	133	128	316	324	330	340	347
DIMENSIONS	4.19	Overall length (pedestrian)	l <sub>1</sub> (mm)	1450	1656	1806	2050	2250	1450	1656	1806	2050	2250
	4.20	Length to face of forks (pedestrian)	l <sub>2</sub> (mm)	650	650	650	650	650	650	650	650	650	650
	4.22	Fork length	l (mm)	800	1006	1156	1400	1600	800	1006	1156	1400	1600
	4.34.1	Aisle width for pallets 1000mm x 1200mm wide (pedestrian)	Ast (mm)	2173	2288	2409	2683	2972	2173	2288	2409	2683	2972
	4.34.2	Aisle width for pallets 800mm x 1200mm long (pedestrian)	Ast (mm)	2173	2219	2276	2451	2698	2173	2219	2276	2451	2698
	4.35	Turning radius (pedestrian)	Wa (mm)	1251	1457	1607	1851	2051	1251	1457	1607	1851	2051
ELECTRIC	6.3	Battery according to DIN 43531/35/36 A,B,C, no		B					No				
	6.4	Battery voltage / capacity at 5 hours rate	(V) / (Ah)	24 / 375 - 315					24 / 200 <sup>(3)</sup>				
	6.5	Battery weight <sup>(1)</sup>	kg	288					132				

(1) These values may vary of +/- 5%

(2) Axle loading with LOAD = 2000Kg

(3) Li-Ion battery

## BATTERY DIMENSIONS – MP SERIES

bs = 520MM - 560MM - 670MM

### Battery 250 / 210 AH

GENERAL			bs = 520MM - 560MM - 670MM										
			400	500	600	700	800	400	500	600	700	800	
GENERAL	1.6	Load centre distance	c (mm)	400	500	600	700	800	400	500	600	700	800
	1.8	Load distance, centre of drive axle to fork	x (mm)	599	805	955	1199	1399	599	805	955	1199	1399
	1.9	Wheelbase	y (mm)	1012	1218	1368	1612	1812	1012	1218	1368	1612	1812
WEIGHT	2.1	Service weight <sup>(1)</sup>	kg	525	536	545	559	570	499 <sup>(3)</sup>	510 <sup>(3)</sup>	519 <sup>(3)</sup>	533 <sup>(3)</sup>	544 <sup>(3)</sup>
	2.2	Axle loading, laden <sup>(2)</sup>	kg (front)	776	910	945	1066	1123	768	771	774	909	945
			kg (rear)	1749	1626	1600	1493	1447	1731	1739	1745	1624	1599
	2.3	Axle loading, unladen	kg (front)	382	409	425	447	461	363	371	378	407	424
			kg (rear)	143	127	120	112	109	136	139	141	126	120
DIMENSIONS	4.19	Overall length (pedestrian)	l <sub>1</sub> (mm)	1378	1584	1734	1978	2178	1378	1584	1734	1978	2178
	4.20	Length to face of forks (pedestrian)	l <sub>2</sub> (mm)	578	578	578	578	578	578	578	578	578	578
	4.22	Fork length	l (mm)	800	1006	1156	1400	1600	800	1006	1156	1400	1600
	4.34.1	Aisle width for pallets 1000mm x 1200mm wide (pedestrian)	Ast (mm)	2101	2216	2337	2611	2900	2101	2216	2337	2611	2900
	4.34.2	Aisle width for pallets 800mm x 1200mm long (pedestrian)	Ast (mm)	2101	2147	2204	2379	2626	2101	2147	2204	2379	2626
	4.35	Turning radius (pedestrian)	Wa (mm)	1179	1385	1535	1779	1979	1179	1385	1535	1779	1979
ELECTRIC	6.3	Battery according to DIN 43531/35/36 A,B,C, no		B					No				
	6.4	Battery voltage / capacity at 5 hours rate	(V) / (Ah)	24 / 250 - 210					24 / 250 <sup>(4)</sup>				
	6.5	Battery weight <sup>(1)</sup>	kg	212					180				

(1) These values may vary of +/- 5%

(2) Axle loading with LOAD = 2000Kg

(3) Includes ballast 6kg

(4) Polypropylene case version

All values are nominal values and they are subject to tolerances.

## BATTERY DIMENSIONS – MP SERIES

bs = 520MM - 560MM - 670MM

Battery 150 AH

GENERAL			bs = 520MM - 560MM - 670MM										
			400	500	600	700	800	400	500	600	700	800	
GENERAL	1.6	Load centre distance	c (mm)	400	500	600	700	800	400	500	600	700	800
	1.8	Load distance, centre of drive axle to fork	x (mm)	599	805	955	1199	1399	599	805	955	1199	1399
	1.9	Wheelbase	y (mm)	950	1156	1306	1550	1750	950	1156	1306	1550	1750
WEIGHT	2.1	Service weight <sup>(1)</sup>	kg	449	460	469	483	494	430	441	450	464	475
	2.2	Axle loading, laden <sup>(2)</sup>	kg (front)	748	881	912	1032	1086	729	862	893	1013	1067
			kg (rear)	1701	1579	1557	1451	1408	1701	1579	1557	1451	1408
	2.3	Axle loading, unladen	kg (front)	328	352	367	387	400	314	337	352	371	384
			kg (rear)	121	108	102	96	94	116	104	98	93	91
DIMENSIONS	4.19	Overall length (pedestrian)	l <sub>1</sub> (mm)	1316	1522	1672	1916	2116	1316	1522	1672	1916	2116
	4.20	Length to face of forks (pedestrian)	l <sub>2</sub> (mm)	516	516	516	516	516	516	516	516	516	516
	4.22	Fork length	l (mm)	800	1006	1156	1400	1600	800	1006	1156	1400	1600
	4.34.1	Aisle width for pallets 1000mm x 1200mm wide (pedestrian)	Ast (mm)	2039	2154	2275	2549	2838	2039	2154	2275	2549	2838
	4.34.2	Aisle width for pallets 800mm x 1200mm long (pedestrian)	Ast (mm)	2039	2085	2142	2317	2564	2039	2085	2142	2317	2564
	4.35	Turning radius (pedestrian)	Wa (mm)	1117	1323	1473	1717	1917	1117	1323	1473	1717	1917
ELECTRIC	6.3	Battery according to DIN 43531/35/36 A,B,C, no		No					No				
	6.4	Battery voltage / capacity at 5 hours rate	(V) / (Ah)	24 / 150					24 / 150 <sup>(3)</sup>				
	6.5	Battery weight <sup>(1)</sup>	kg	144					125				

(1) These values may vary of +/- 5%

(2) Axle loading with LOAD = 2000Kg

(3) Polypropylene case version

## BATTERY DIMENSIONS – MP SERIES

bs = 520MM - 560MM - 670MM

Battery 150 AH

GENERAL			bs = 520MM - 560MM - 670MM										
			400	500	600	700	800	400	500	600	700	800	
GENERAL	1.6	Load centre distance	c (mm)	400	500	600	700	800	400	500	600	700	800
	1.8	Load distance, centre of drive axle to fork	x (mm)	599	805	955	1199	1399	599	805	955	1199	1399
	1.9	Wheelbase	y (mm)	950	1156	1306	1550	1750	950	1156	1306	1550	1750
WEIGHT	2.1	Service weight <sup>(1)</sup>	kg	367	378	387	401	412	350	361	370	384	395
	2.2	Axle loading, laden <sup>(2)</sup>	kg (front)	723	726	729	734	737	718	721	724	728	732
			kg (rear)	1644	1652	1658	1667	1675	1632	1640	1646	1656	1663
	2.3	Axle loading, unladen	kg (front)	112	115	118	123	126	107	110	113	117	121
			kg (rear)	255	263	269	278	286	243	251	257	267	274
DIMENSIONS	4.19	Overall length (pedestrian)	l <sub>1</sub> (mm)	1316	1522	1672	1916	2116	1316	1522	1672	1916	2116
	4.20	Length to face of forks (pedestrian)	l <sub>2</sub> (mm)	516	516	516	516	516	516	516	516	516	516
	4.22	Fork length	l (mm)	800	1006	1156	1400	1600	800	1006	1156	1400	1600
	4.34.1	Aisle width for pallets 1000mm x 1200mm wide (pedestrian)	Ast (mm)	2039	2154	2275	2549	2838	2039	2154	2275	2549	2838
	4.34.2	Aisle width for pallets 800mm x 1200mm long (pedestrian)	Ast (mm)	2039	2085	2142	2317	2564	2039	2085	2142	2317	2564
	4.35	Turning radius (pedestrian)	Wa (mm)	1117	1323	1473	1717	1917	1117	1323	1473	1717	1917
ELECTRIC	6.3	Battery according to DIN 43531/35/36 A,B,C, no		No					No				
	6.4	Battery voltage / capacity at 5 hours rate	(V) / (Ah)	24 / 50 <sup>(3)</sup>					24 / 60 <sup>(3)</sup>				
	6.5	Battery weight <sup>(1)</sup>	kg	62					45				

(1) These values may vary of +/- 5%

(2) Axle loading with LOAD = 2000Kg

(3) Li-Ion battery

## BATTERY DIMENSIONS – MP SERIES

b<sub>s</sub> = 520MM - 560MM - 670MM

### Battery 150 AH

GENERAL			c (mm)	400	500	600	700	800
1.6	Load centre distance							
1.8	Load distance, centre of drive axle to fork	x (mm)	599	805	955	1199	1399	
1.9	Wheelbase	y (mm)	950	1156	1306	1550	1750	
WEIGHT								
2.1	Service weight <sup>(1)</sup>	kg	380	391	400	414	425	
2.2	Axle loading, laden <sup>(2)</sup>	kg (front)	727.1	730.5	733.2	737.5	740.8	
		kg (rear)	1653	1661	1667	1677	1684	
2.3	Axle loading, unladen	kg (front)	116.1	119.5	122.2	126.5	129.8	
		kg (rear)	263.9	271.5	277.8	287.5	295.2	
DIMENSIONS								
4.19	Overall length (pedestrian)	l <sub>1</sub> (mm)	1316	1522	1672	1916	2116	
4.20	Length to face of forks (pedestrian)	l <sub>2</sub> (mm)	516	516	516	516	516	
4.22	Fork length	l (mm)	800	1006	1156	1400	1600	
4.34.1	Aisle width for pallets 1000mm x 1200mm wide (pedestrian)	Ast (mm)	2039	2154	2275	2549	2838	
4.34.2	Aisle width for pallets 800mm x 1200mm long (pedestrian)	Ast (mm)	2039	2085	2142	2317	2564	
4.35	Turning radius (pedestrian)	Wa (mm)	1117	1323	1473	1717	1917	
ELECTRIC								
6.3	Battery according to DIN 43531/35/36 A,B,C, no					No		
6.4	Battery voltage / capacity at 5 hours rate	(V) / (Ah)				24 / 120 <sup>(3)</sup>		
6.5	Battery weight <sup>(1)</sup>	kg				75		

(1) These values may vary of +/- 5%

(2) Axle loading with LOAD = 2000Kg

(3) Li-Ion battery

**All values are nominal values and they are subject to tolerances.**



# About Yale®

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## Yale Lift Truck Technologies


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