

# Pedestrian Powered Pallet Trucks

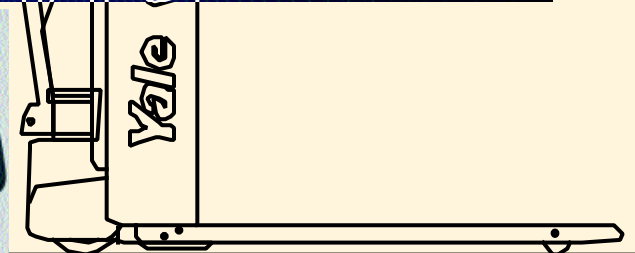
1,600 kg – 3,000 kg

Yale

MP/MPHD



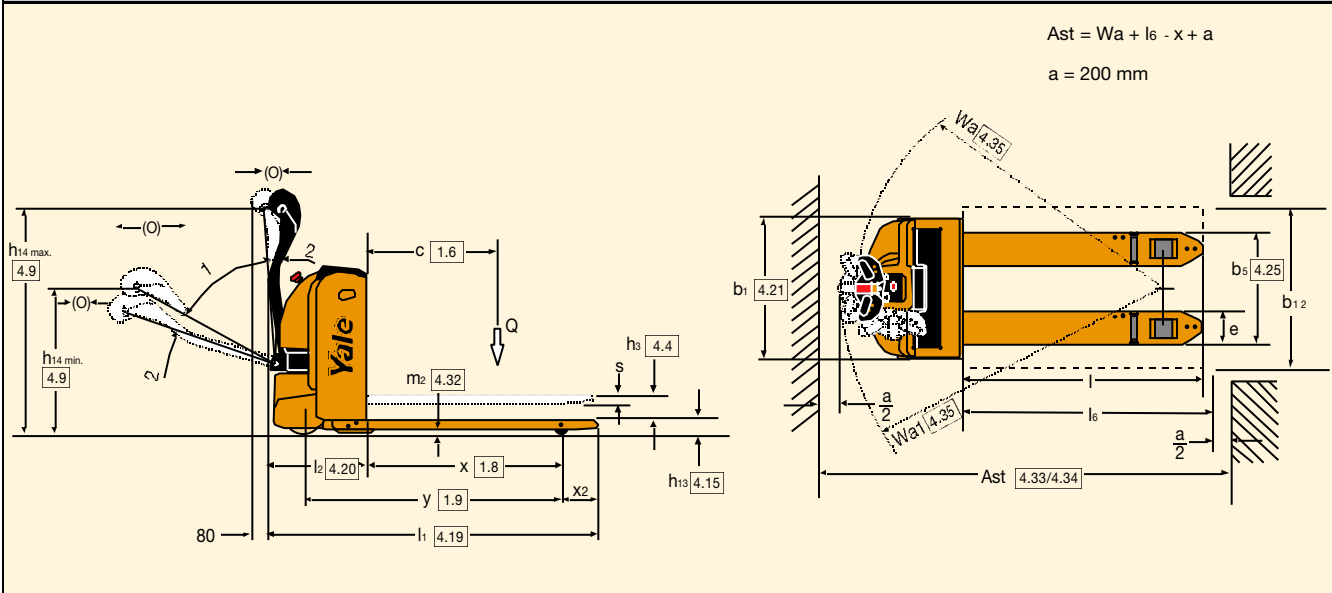
MP25/30HD



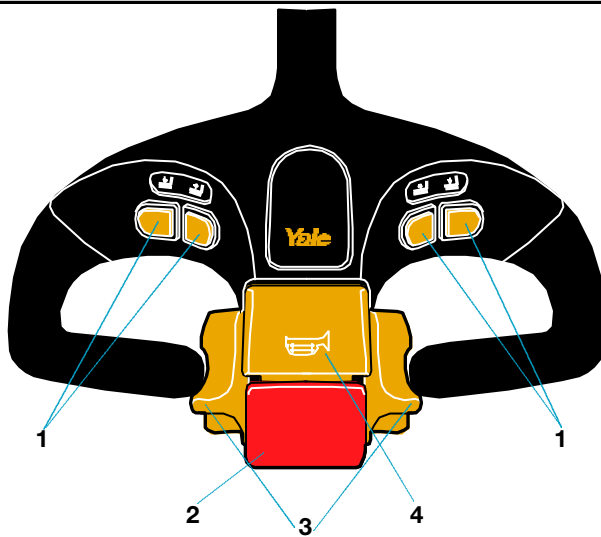
- Ergonomic tiller head and low mounted tiller arm offer excellent operator comfort
- Compact powerhead length and creep speed for excellent manoeuvrability
- 3 preset performance settings to suit driver preferences
- SEM drive motor and MOSFET transistor control on traction and hydraulics
- On-board charger option (standard on MP16)



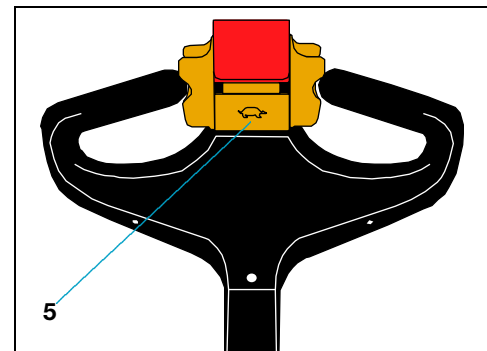
## Truck Dimensions



## Tiller Head



- 1 lift / lower buttons
- 2 travel direction inverter button
- 3 butterfly control buttons for direction and speed
- 4 horn
- 5 creep speed control



## VDI 2198 - General Specifications

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Characteristics	1.1	Manufacturer		Yale	Yale	Yale	Yale	Yale	Yale	Yale
	1.2	Model designation		<b>MP16</b>	<b>MP18</b>	<b>MP20</b>	<b>MP20L</b>	<b>MP22</b>	<b>MP25HD</b>	<b>MP30HD</b>
	1.3	Power: Battery, Diesel, LPG, Electric mains		Battery	Battery	Battery	Battery	Battery	Battery	Battery
	1.4	Operation: Manual, pedestrian, stand-on, seated, orderpicker		Pedestrian	Pedestrian	Pedestrian	Pedestrian	Pedestrian	Pedestrian	Pedestrian
	1.5	Load capacity	Q (t)	1.6	1.8	2.0	2.0	2.2	2.5	3.0
	1.6	Load centre	c (mm)	600	600	600	600	600	600	600
	1.8	Load distance	x (mm)	1007	1007	1007	1007	1007	965	965
	1.9	Wheelbase	y (mm)	1337	1337	1337	1409	1409	1530	1530
	Weights	2.1	Unladen weight	kg	396	503	503	523	530	760
2.2		Axle loading laden, front/rear	kg	699 / 1297	806 / 1497	876 / 1627	883 / 1640	955 / 1775	1075 / 2185	1196 / 2584
2.3		Axle loading unladen, front/rear	kg	307 / 89	399 / 104	399 / 104	415 / 108	422 / 108	570 / 190	590 / 190
Wheels and Tyres	3.1	Tyres - rubber, polyurethane front/rear		Poly/Vulkollan	Poly/Vulkollan	Poly/Vulkollan	Poly/Vulkollan	Poly/Vulkollan	Poly/Vulkollan	Poly/Vulkollan
	3.2	Tyre size - front		230 x 75	230 x 75	230 x 75	230 x 75	230 x 75	260 x 95	260 x 95
	3.3	Tyre size - rear		85 x 90	85 x 90	85 x 90	85 x 90	85 x 90	85 x 70	85 x 70
	3.4	Additional wheels (dimensions)		100 x 40	100 x 40	100 x 40	100 x 40	100 x 40	100 x 40	100 x 40
	3.5	Wheels - number front/rear (x = driven)		1x+2/2	1x+2/2	1x+2/2	1x+2/2	1x+2/2	1x+2/4	1x+2/4
	3.6	Track width - front	b <sub>10</sub> (mm)	470	470	470	470	470	485	485
	3.7	Track width - rear	b <sub>11</sub> (mm)	395	395	395	395	395	380	380
Dimensions	4.4	Lift height	h <sub>3</sub> (mm)	130	130	130	130	130	120	120
	4.9	Height of tiller arm in working position min./max.	h <sub>14</sub> (mm)	735 / 1200	735 / 1200	735 / 1200	735 / 1200	735 / 1200	650 / 1325	650 / 1325
	4.15	Lowered height	h <sub>13</sub> (mm)	85	85	85	85	85	85	85
	4.19	Overall length	l <sub>1</sub> (mm)	1678	1683	1683	1755	1755	1888	1888
	4.20	Length to front face of forks	l <sub>2</sub> (mm)	495**	500**	500**	572**	572**	732	732
	4.21	Overall width	b <sub>1</sub> /b <sub>2</sub> (mm)	700	700	700	700	700	735	735
	4.22	Fork dimensions	s/e/l (mm)	55/165/1183	55/165/1183	55/165/1183	55/170/1183	55/170/1183	55/180/1156	55/180/1156
	4.25	Outside fork width	b <sub>5</sub> (mm)	560	560	560	560	560	560	560
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	20	20	20	20	20	30	30
	4.33	Aisle width for pallets 1000 x 1200 wide	Ast (mm)	1706**	1711**	1711**	1783**	1783**	1887**	1887**
	4.34	Aisle width for pallets 800 x 1200 long	Ast (mm)	1906**	1911**	1911**	1983**	1983**	2087**	2087**
4.35	Turning radius	Wa (mm)	1513**	1518**	1518**	1590**	1590**	1652**	1652**	
Performance	5.1	Travel speed, laden/unladen	kph	5.5/6	5.5/6	5.5/6	5.5/6	5.5/6	5.7/6	5.5/6
	5.2	Lift speed, laden/unladen	m/s	0.030/0.040	0.037/0.049	0.037/0.049	0.037/0.049	0.037/0.049	0.029/0.037	0.029/0.037
	5.3	Lowering speed, laden/unladen	m/s	0.039/0.037	0.039/0.037	0.039/0.037	0.039/0.037	0.039/0.037	0.048/0.044	0.048/0.044
	5.8	Max. gradeability, laden/unladen	%	10 / 20	10 / 20	10 / 20	10 / 20	10 / 20	8 / 20	5 / 20
	5.10	Service brake		Electromagnetic	Electromagnetic	Electromagnetic	Electromagnetic	Electromagnetic	Electromagnetic	Electromagnetic
Motors	6.1	Drive motor rating (S2 60 min)	kW	0.8	1	1.5	1.5	1.5	2.6	2.6
	6.2	Lift motor rating (S3 15%)	kW	1 <sup>(2)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>
	6.3	Battery to DIN 43531/35/36 A, B, C, no		no	no	no	DIN 43535 B	DIN 43535 B	no	no
	6.4	Battery voltage/capacity (5 hour rate)	V/Ah	24 / 150	24 / 200	24 / 200	24 / 250*	24 / 250*	24 / 300	24 / 300
	6.5	Battery weight	kg	146	225	225	250	250	260	260
Other	8.1	Drive control		MOSFET	MOSFET	MOSFET	MOSFET	MOSFET	MOSFET	MOSFET

\* Max battery capacity = 24/300 V/Ah with "non Din" battery (no lateral extraction option available with this battery size)

\*\* Tiller arm in vertical working position (creep speed)

<sup>(1)</sup> S3 15% rating

<sup>(2)</sup> S3 10% rating

## Models:

**MP16, MP18, MP20, MP20L  
MP22, MP25HD, MP30HD**

### Tiller head and controls

The tiller head is designed for operator comfort and features an ergonomic shaped handle with angled grips and integral hand guard. Large dimensioned, low effort butterfly buttons control direction of travel and speed as well as the electromagnetic brake. All controls are accessible without having to lift the hand from the handle. Dual lift and lower buttons are conveniently located on the tiller head and can be readily accessed for left or right hand use. The travel direction inverter button is designed for maximum angle of contact with the operator's body. When activated, the direction of travel is automatically reversed and the truck comes to a stop. The horn is located on top of the tiller head and conveniently actuated by thumb or forefinger. The creep speed control allows the truck to be operated with the tiller arm in the vertical position at reduced speed for manoeuvring in tight confines. 3 preset performance settings (soft, standard and hard) provide different performance levels for forward and reverse travel speeds, reverse current braking, release braking, lift speed and acceleration. The settings are easily selectable to suit driver preference.

### Tiller arm

The low anchor point requires minimum steering effort and the long tiller arm enhances the operating clearance when walking inside the truck envelope. The tiller arm is spring assisted and returns automatically to the vertical position when released.

### Chassis

The chassis design provides fully enclosed protection for the battery, drive train and main components. Compact powerhead dimensions make the machines highly manoeuvrable in tight confines without sacrificing battery capacity. The MP22, 25HD and 30HD feature a side battery removal option. An on-board charger is standard on the MP16 model and an optional extra on all other models.

### Forks

Single load wheels are standard on the MP16, 18, 20 and 20L and 22 models, with tandem load wheels optionally available. Heavy-duty tandem load wheels are standard on the MP25HD and 30HD models. Skid plates on the MP16, 18, 20, 20L and 22 models facilitate handling of bottom-boarded pallets.

### Traction and pump control

A MOSFET high frequency controller is used to regulate both traction and pump operation. Energy efficient, smooth progressive control is available at all times. The controller features automatic braking (reverse current braking) and regenerative braking on release of the butterfly buttons as well as anti-rollback start-up on an incline. 3 pre-set performance settings are available to the operator. Additionally, the controller can be adjusted for forward and reverse travel speeds, reverse current braking, release braking, lift speed and acceleration using a plug-in console. The controller features an in-built diagnostic system and alarm history as well as thermal protection.

### Drive unit

Separately excited (SEM) drive motors are used across the range. They deliver fast travel speeds in the laden/unladen condition, high start-up torque and acceleration as well as efficient running. The use of SEM motor technology eliminates forward and reverse contactors. The motors are mounted vertically for easy brush access, improved ventilation and minimum contamination from floor conditions. Motors on the MP16, 18, 20, 20L and 22 models are fixed to eliminate flexing stresses to the power cable.

### Hydraulics

The pump is controlled directly by the controller eliminating the need for a pump contactor. Lift and lower functions are actuated directly from the tiller head controls. The lift interrupt feature on all models protects the

battery from deep discharge. A transparent oil reservoir facilitates checking of the oil level.

### Brake

The electromagnetic brake is electrically released and spring applied. The brake is opened and closed by activation of the butterfly buttons with the tiller arm in the working position. The brake is closed by bringing the tiller arm to the vertical or horizontal position. Reverse current braking is applied by inverting the direction of travel. Releasing the butterfly buttons induces both reverse current braking (adjustable) and regenerative braking.

### Instrumentation

A combined hourmeter and battery discharge indicator with alarm condition display is featured on the dashboard (optional on the MP16). A quick disconnect power cut-out button is also mounted on the dashboard.

### Options

A comprehensive range of options including fork widths and lengths, rubber, non marking and wet grip tyres, cold store protection, load backrest, on-board charger (std on MP16 model), and side battery removal is available.



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Truck shown with optional equipment