

## Models:

MP20T

MP20S, MP30S

### Controls

The electronic fly by wire steering requires minimum effort and allows rapid manoeuvring. It can be adjusted for a number of turns lock to lock to suit driver preference. A spinner knob is standard.

**MP20T** - The large dimensioned, low effort butterfly button controls direction of travel and speed as well as the opening and closing of the electromagnetic brake. Horn, lift and lower buttons are conveniently located beneath the handgrip for finger tip operation. A contoured polyurethane cushion seat with backrest permits seated operation/support to relieve fatigue over extended travel runs.

**MP20S-MP30S** - Travel direction is selected via a rocker switch located on the dash board. Speed and braking is controlled by a floor mounted accelerator pedal. Horn button, and lift and lower lever are located on the dashboard for easy right hand operation. A textile padded seat adjustable for rake provides firm support over long travel distances.

### Chassis

The pressed steel welded chassis provides fully enclosed protection for the drive train and battery. The powerhead section with independent lifting mechanism provides a particularly rigid and robust structure.

**MP20T** - the compact chassis width of 790mm facilitates the handling of Europallet in loading/unloading applications and block storage. The low step height of 285mm facilitates easy on/off.

**MP20S-MP30S** - The wide chassis width offers generous leg room for prolonged seated rider operation. Provision for side battery extraction featuring battery rollers is standard. The battery retention device does not require any special tools. The battery compartment offers a maximum battery size up to 375Ah (MP20T) / 460Ah (MP20/30S). Battery removal options include a single bed table and a twin bed trolley for battery change.

Swing open door and removable plates provide access to traction, pump and steering motors.

### Forks

Adjustable pull rods provide smooth even lifting and lowering. The 120mm lift provides high ramp clearance. Load wheels and fork levers are fitted with grease points for extended service life in arduous applications. Tandem load wheels are standard. Exit and entry rollers are standard on fork lengths 1000/1150 mm.

### Traction and pump control

A new generation MOSFET high frequency COMBI 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 as well as anti-rollback start-up on an incline. Automatic speed reduction when cornering is activated via the controller. The speed reduction can be adjusted for angle and force of braking. Using a plug-in console the controller can be adjusted for forward and reverse travel speeds, reverse current braking, release braking, acceleration and speed reduction when cornering. The controller features an in-built diagnostic system and alarm history as well as thermal protection.

### Drive unit

The separately excited (SEM) drive motor delivers 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 motor is mounted vertically for easy brush access, improved ventilation and minimum contamination from floor conditions. It is flanged directly on to a helical gear transmission running in an oil bath. The motor is fixed to reduce flexing stress to the power cables. Drive wheel is mounted automobile style to the wheel hub for easy change.

### Hydraulics

A heavy duty series wound motor drives the pump. Lift/lower functions are actuated directly by a lever control via the COMBI controller.

### Brake

The electromagnetic brake is electrically released and spring applied. Reverse current braking is applied by inverting the direction of travel. Releasing the butterfly button (MP20T), the accelerator pedal (MP20S/MP30S) induces both reverse current braking (adjustable) and regenerative braking.

**MP20T** - The brake is opened and closed by activation of the butterfly button with the foot presence switch depressed. The brake is closed by lifting the foot off the foot presence switch.

**MP20S-MP30S** - The electromagnetic brake is opened and closed by the accelerator pedal with the foot presence switch depressed. The brake is closed by lifting the foot off the foot presence switch.

### Instrumentation

A steering wheel position indicator and a combined hourmeter/battery discharge indicator with lift interrupt are featured on the instrument panel. The indicator also displays alarm conditions should they occur. A quick disconnect traction cut-out button is mounted on the dashboard.

### Options

A comprehensive range of options including fork lengths and widths, tyre options, side battery removal table and battery change trolley, is available.



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**Safety.** This truck conforms to the current EU requirements. Specification is subject to change without notice

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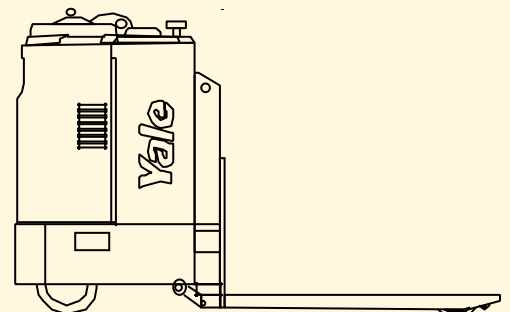
Truck shown with optional equipment

## Stand-on/Seated Rider Powered Pallet Trucks

2,000kg and 3,000kg



MP20S-MP30S



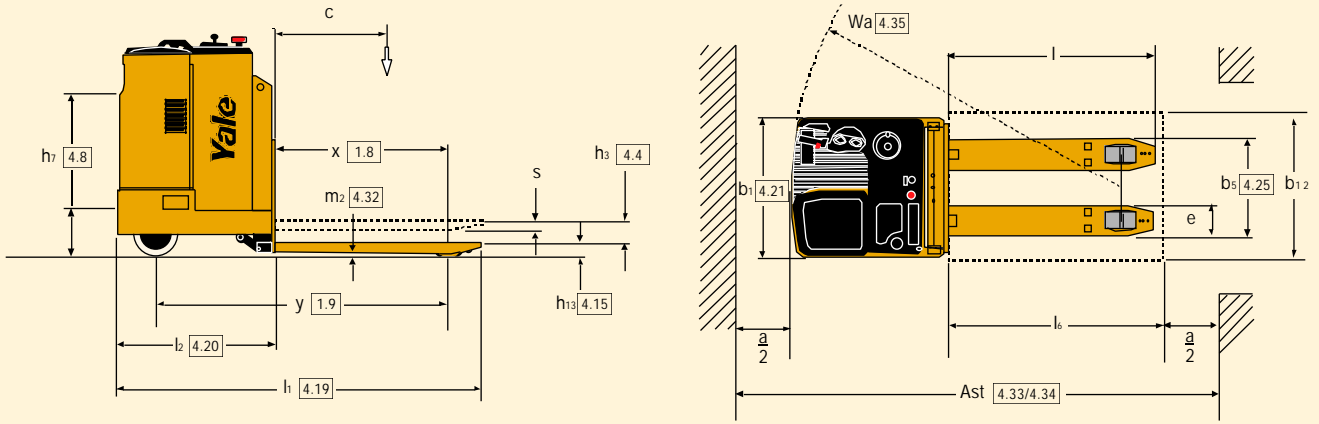
- Electronic fly by wire steering
- Narrow 790mm chassis for Europallet handling
- Speed reduction on cornering
- Combi MOSFET traction and pump control
- SEM drive motor
- Automatic release braking
- Regenerative braking



## Truck Dimensions - MP20T

$$Ast = Wa + l_6 \cdot x + a$$

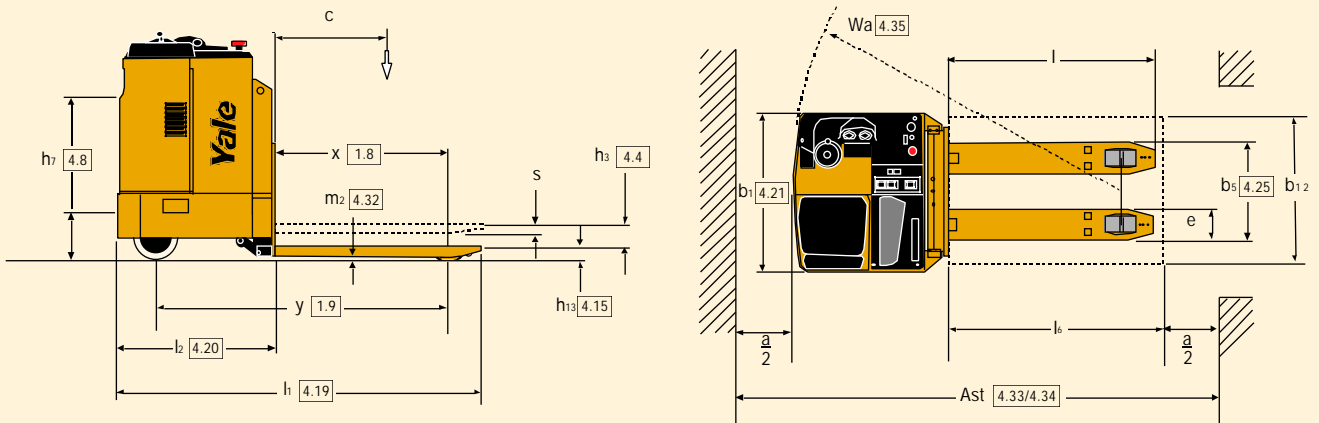
$$a = 200 \text{ mm}$$



## Truck Dimensions - MP20S-MP30S

$$Ast = Wa + l_6 \cdot x + a$$

$$a = 200 \text{ mm}$$



## VDI 2198 - General Specifications

VDI 2198 - General Specifications						
Characteristics	1.1	Manufacturer		Yale	Yale	Yale
	1.2	Model designation		<b>MP20T</b>	<b>MP20S</b>	<b>MP30S</b>
	1.3	Power		Battery	Battery	Battery
	1.4	Operation		Stand-on / Seated	Seated	Seated
	1.5	Load capacity	Q (t)	2	2	3
	1.6	Load centre	c (mm)	600	600	600
	1.8	Load distance	x (mm)	965	965	965
	1.9	Wheelbase	y (mm)	1622	1633	1633
	Weights	2.1	Unladen weight	kg	1100	1070
2.2		Axle loading laden, front/rear	kg	1200 / 1900	1270 / 1800	1530 / 2560
2.3		Axle loading unladen, front/rear	kg	860 / 240	820 / 250	820 / 270
Wheels and Tyres	3.1	Tyres - rubber, polyurethane front/rear		Poly / Poly	Poly / Poly	Poly / Poly
	3.2	Tyre size - front		Ø 254 x 127	Ø 254 x 127	Ø 254 x 127
	3.3	Tyre size - rear		Ø 85 x 90	Ø 85 x 90	Ø 85 x 90
	3.4	Additional wheels (dimensions)		Ø 180 x 75	Ø 180 x 75	Ø 180 x 75
	3.5	Wheels - number front/rear (x = driven)		1 x + 1/4	1 x + 1/4	1 x + 1/4
	3.6	Track width - front	b10 (mm)	430	635	635
	3.7	Track width - rear	b11 (mm)	380	380	380
Dimensions	4.4	Lift height	h3 (mm)	120	120	120
	4.8	Height of seat/platform	h7 (mm)	930 / 285	910 / 420	910 / 420
	4.15	Lowered height	h13 (mm)	85	85	85
	4.19	Overall length	l1 (mm)	2027	2039	2039
	4.20	Length to front face of forks	l2 (mm)	877	883	883
	4.21	Overall width	b1/b2 (mm)	790	960	960
	4.22	Fork dimensions	s/e/l (mm)	55 / 180 / 1150	55 / 180 / 1150	55 / 180 / 1150
	4.25	Outside fork width	bs (mm)	560	560	560
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	30	30	30
	4.33	Aisle width for pallets 1000 x 1200 wide	Ast (mm)	2077	2105	2105
	4.34	Aisle width for pallets 800 x 1200 long	Ast (mm)	2277	2300	2300
4.35	Turning radius	Wa (mm)	1842	1865	1865	
Performance	5.1	Travel speed, laden/unladen	kph	7.5 / 9.5	7.5 / 9.5	7.5 / 9.5
	5.2	Lift speed, laden/unladen	m/s	0.029 / 0.037	0.029 / 0.037	0.029 / 0.037
	5.3	Lowering speed, laden/unladen	m/s	0.048 / 0.044	0.048 / 0.044	0.048 / 0.044
	5.8	Max. gradeability, laden/unladen	%	8 / 15	8 / 20	5 / 20
	5.10	Service brake		Electromagnetic	Electromagnetic	Electromagnetic
Motors	6.1	Drive motor rating (S2 60 min)	kW	2.6	2.6	2.6
	6.2	Lift motor rating (S3 10%)	kW	2	2	2
	6.3	Battery to DIN 43531/35/36 A, B, C, no		43535 B	43535 A	43535 A
	6.4	Battery voltage/capacity (5 hour rate)	V/Ah	24 / 375	24 / 460	24 / 460
	6.5	Battery weight	kg	320	260	260
8.1	Drive control		MOSFET	MOSFET	MOSFET	