MTC Series

Very Narrow Aisle Turret Truck

1,000kg / 1,300kg / 1,500kg

- Integrated pantograph (reduced operating aisle)
- Sealed Yale AC motors
- High performance
- Ergonomic operating environment
- Seated or standing operation
- Choice of forward mounted or seat side control
- Simultaneous controls, patented hydraulic control system

Truck Dimensions

Mast details - 2 stage Triform / 2 stage Quadform

Model	Mast type	Maximum fork height H = $h_9+h_3+h_{13}$ mm	Overall lowered height (main mast) h_1 mm	Overall lowered height (mini mast) h_6 mm	Free lift h_9 mm	Main lift h_3 mm	Overall extended height h_4 mm	Raised platform height h_{12} mm
MTC10 MTC13 MTC13 80 MTC13LWB MTC15SWB	2 stage Triform	5240	2740	3020	1980	3180	6227	3585
		5740	2990	3020	1980	3680	6727	4085
		6240	3240	3020	1980	4180	7227	4585
		6740	3490	3020	1980	4680	7727	5085
		7240	3740	3020	1980	5180	8227	5585
		7740	3990	3020	1980	5680	8727	6085
MTC13 MTC13 80 MTC13LWB MTC15SWB	2 stage Triform	8240	4240	3020	1980	6180	9227	6585
		8740	4490	3020	1980	6680	9727	7085
		9240	4740	3020	1980	7180	10227	7585
		9740	4990	3020	1980	7680	10727	8085
		10220	5390	3020	1980	8160	11207	8565
MTC13LWB MTC15SWB	2 stage Triform	10520	5540	3020	1980	8460	11507	8865
		10920	5740	3020	1980	8860	11907	9265
MTC15SWB	2 stage Triform	11420	5990	3020	1980	9360	12407	9765
		11620	6090	3020	1980	9560	12607	9965
		11920	6240	3020	1980	9860	12907	10265
		12320	6440	3020	1980	10260	13307	10665
MTC15MWB MTC15LWB	2 stage Quadform	5420	2990	3020	1980	3360	6407	3765
		5920	3240	3020	1980	3860	6907	4265
		6420	3490	3020	1980	4360	7407	4765
		6920	3740	3020	1980	4860	7907	5265
		7420	3990	3020	1980	5360	8407	5765
		7920	4240	3020	1980	5860	8907	6265
		8420	4490	3020	1980	6360	9407	6765
		8920	4740	3020	1980	6860	9907	7265
		9420	4990	3020	1980	7360	10407	7765
		9920	5240	3020	1980	7860	10907	8265
		10220	5390	3020	1980	8160	11207	8565
		10920	5740	3020	1980	8860	11907	9265
		11420	5990	3020	1980	9360	12407	9765
		11920	6240	3020	1980	9860	12907	10265
MTC15LWB	2 stage Quadform	12320	6440	3020	1980	10260	13307	10665

Mast details - 3 stage Triform / 3 stage Quadform

Model	Mast type	Maximum fork height H = $h_9+h_3+h_{13}$ mm	Overall lowered height (main mast) h_1 mm	Overall lowered height (mini mast) h_6 mm	Free lift h_9 mm	Main lift h_3 mm	Overall extended height h_4 mm	Raised platform height h_{12} mm
MTC13 MTC13 80 MTC13LWB MTC15SWB	3 stage Triform	5630	2490	3020	1980	3570	6617	3975
		6380	2740	3020	1980	4320	7367	4725
		7130	2990	3020	1980	5070	8117	5475
		7880	3240	3020	1980	5820	8867	6225
		8630	3490	3020	1980	6570	9617	6975
		9380	3740	3020	1980	7320	10367	7725
		10130	3990	3020	1980	8070	11117	8475
		10880	4240	3020	1980	8820	11867	9225
MTC13LWB MTC15SWB	3 stage Triform	11630	4490	3020	1980	9570	12617	9975
		12380	4740	3020	1980	10320	13367	10725
MTC15MWB MTC15LWB	3 stage Quadform	7700	3240	3020	1980	5640	8687	6045
		8450	3490	3020	1980	6390	9437	6795
		9200	3740	3020	1980	7140	10187	7545
		9950	3990	3020	1980	7890	10937	8295
		10700	4240	3020	1980	8640	11687	9045
		11450	4490	3020	1980	9390	12437	9795
		12200	4740	3020	1980	10140	13187	10545
		12950	4990	3020	1980	10890	13937	11295
MTC15LWB	3 stage Quadform	13700	5240	3020	1980	11640	14687	12045

Auxillary Mini Mast options

Model	Maximum fork height h_9 mm	Overall extended height h_4 mm	Overall lowered height (mini mast) h_6 mm
MTC10, MTC13, MTC13 80, MTC13LWB MTC15SWB, MTC15MWB, MTC15LWB	1980	+ 0	3020
	2140	+ 160	3020
	2720	+ 740	3585
	3000	+1020	3865

VDI 2198 - General Specifications

Distinguishing mark	1.1	Manufacturer (abbreviation)		Yale	Yale
	1.2	Manufacturer's type designation		**MTC10**	**MTC13**
	1.3	Drive: electric (battery or mains), diesel, petrol, fuel gas		Electric	Electric
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker		Standing / seated	Standing / seated
	1.5	Rated capacity/rated load	Q (t)	1.0	1.3
	1.6	Load centre distance	c (mm)	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	variable	variable
	1.9	Wheelbase	y (mm)	1783	1943
Weights	2.1	Service weight	kg	6276	6701
	2.2	Axle loading, laden front/rear	kg	variable	variable
	2.3	Axle loading, laden front/rear	kg	variable	variable
Tyres/chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		polyurethane	polyurethane
	3.2	Tyre size, front		ø 350 x 140	ø 350 x 140
	3.3	Tyre size, rear		ø 400 x 160	ø 400 x 160
	3.5	Wheels, number front/rear (x = driven wheels)		2 / 1(x)	2 / 1(x)
	3.6	Tread, front	b10 (mm)	variable	variable
	3.7	Tread, rear	b11 (mm)	0	0
Dimensions	4.2	Height, mast lowered	h1 (mm)	see table	see table
	4.3	Free lift	h2 (mm)	-	-
	4.4	Lift	h3 (mm)	see table	see table
	4.5	Height, mast extended	h4 (mm)	see table	see table
	4.7	Height of additional lift mast	h6 (mm)	see table	see table
	4.8	Seat height relating to SIP/stand height	h7 (mm)	425	425
	4.11	Additional lift	h9 (mm)	see table	see table
	4.12	Coupling height	h10 (mm)	see table	see table
	4.14	Stand height, elevated	h12 (mm)	see table	see table
	4.15	Height, lowered	h13 (mm)	80	80
	4.19	Overall length	l1 (mm)	variable	variable
	4.20	Length to face of forks	l2 (mm)	variable	variable
	4.21	Overall width	b1/b2 (mm)	variable	variable
	4.22	Fork dimensions ISO 2331	s/e/l (mm)	45 / 100 / 1200 [4]	45 / 100 / 1200 [4]
	4.23	Fork carriage ISO 2328, class/type A,B		No	No
	4.24	Fork carriage width	b3 (mm)	720	720
	4.25	Distance between fork arms	b5 (mm)	510 / 690	510 / 690
	4.27	Width across guide rolls	b6 (mm)	variable	variable
	4.29	Reach, lateral	b7 (mm)	variable	variable
	4.31	Ground clearance, laden, below mast	m1 (mm)	45	45
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	75	75
	4.34.2	Aisle width for pallets 800mm x 1200mm lengthways	Ast (mm)	1600 [5]	1600 [5]
	4.35	Turning radius	Wa (mm)	2100	2250
	4.38	Rotator center	l8 (mm)	670	670
	4.39	Length rotator arm	n (mm)	670	670
	4.40	Width traverse frame	B (mm)	variable	variable
	4.41	Lost rotator width	F (mm)	210	210
	4.42	Transfer aisle width pallet 1200 x 1200 mm	Au (mm)	4140 [2]	4295 [2]
Performance data	5.1	Travel speed, laden/unladen*	km/h	9.9 / 10.0	10.4 / 10.5
	5.2	Lift speed, laden/unladen	m/s	0.41 / 0.45	0.41 / 0.45
	5.3	Lowering speed, laden/unladen	m/s	0.50 / 0.45	0.50 / 0.45
	5.4	Reaching speed, laden/unladen	m/s	0.30	0.30
	5.8	Max. gradeability, laden/unladen	%	6	6
	5.10	Service brake		electric / mechanical	electric / mechanical
Electric-engine	6.1	Drive motor rating S2 60 min	kW	7.5	7.5
	6.2	Lift motor rating at S3 15%	kW	2 x 12	2 x 12
	6.3	Battery according to DIN 43531/35/36 A, B, C, no		DIN B / DIN C / DIN C	DIN B / DIN C
	6.4	Battery voltage/nominal capacity K5	V / Ah	48 / 560, 48 / 560, 48 / 700	48 / 700, 48 / 840
	6.5	Battery weight	kg	950 / 1000 / 1300	1360 / 1360
	8.1	Type of drive unit		AC ~ MOSFET	AC ~ MOSFET
Addition data	10.1	Operating pressure for attachments	bar	150	150
	10.2	Oil volume for attachments	l/min	6	6
	10.7	Sound pressure level at the driver's seat	dB (A)	< 70	< 70

[2] +76mm for 3 stage mast with 'n'= 670 (MTC13, MTC13 80, MTC13LWB, MTC15SWB, MTC15MWB, MTC15LWB)
[4] Available fork length 800mm, 1000mm, 1066mm and 1200mm
[5] Ast: load dimension function
* 12km/h speed application specific.

Yale	Yale	Yale	Yale	Yale	1.1	Distinguishing mark
MTC13 80	**MTC13 LWB**	**MTC15 SWB**	**MTC15 MWB**	**MTC15 LWB**	1.2	
Electric	Electric	Electric	Electric	Electric	1.3	
Standing / seated	Standing / seated	Standing / seated	Standing / seated	Standing / seated	1.4	
1.3	1.3	1.5	1.5	1.5	1.5	
600	600	600	600	600	1.6	
variable	variable	variable	variable	variable	1.8	
1943	2063	2063	2193	2388	1.9	
6701	7034	7140	7686	7921	2.1	Weights
variable	variable	variable	variable	variable	2.2	
variable	variable	variable	variable	variable	2.3	
polyurethane	polyurethane	polyurethane	polyurethane	polyurethane	3.1	Tyres/chassis
ø 350 x 140	ø 350 x 140	ø 350 x 140	ø 350 x 140	ø 350 x 140	3.2	
ø 400 x 160	ø 406 x 178	ø 406 x 178	ø 406 x 178	ø 406 x 178	3.3	
2 / 1(x)	2 / 1(x)	2 / 1(x)	2 / 1(x)	2 / 1(x)	3.5	
variable	variable	variable	variable	variable	3.6	
0	0	0	0	0	3.7	
see table	see table	see table	see table	see table	4.2	Dimensions
-	-	-	-	-	4.3	
see table	see table	see table	see table	see table	4.4	
see table	see table	see table	see table	see table	4.5	
see table	see table	see table	see table	see table	4.6	
425	425	425	425	425	4.8	
see table	see table	see table	see table	see table	4.11	
see table	see table	see table	see table	see table	4.12	
see table	see table	see table	see table	see table	4.14	
80	80	80	80	80	4.15	
variable	variable	variable	variable	variable	4.19	
variable	variable	variable	variable	variable	4.20	
variable	variable	variable	variable	variable	4.21	
45 / 100 / 1200 (4)	45 / 100 / 1200 (4)	45 / 100 / 1200 (4)	45 / 100 / 1200 (4)	45 / 100 / 1200 (4)	4.22	
No	No	No	No	No	4.23	
720	720	720	720	720	4.24	
510 / 690	510 / 690	510 / 690	510 / 690	510 / 690	4.25	
variable	variable	variable	variable	variable	4.27	
variable	variable	variable	variable	variable	4.29	
45	45	45	45	45	4.31	
75	75	75	75	75	4.32	
1600 (5)	1600 (5)	1600 (5)	1600 (5)	1600 (5)	4.34.2	
2250	2370	2370	2495	2685	4.35	
670	670	670	670	670	4.38	
670	670	670	670	670	4.39	
variable	variable	variable	variable	variable	4.4	
210	210	210	210	210	4.41	
4295 (2)	4410 (2)	4410 (2)	4540 (3)	4735 (3)	4.42	
11.9 / 12.0	10.4 / 10.5	11.9 / 12.0	11.9 / 12.0	11.9 / 12.0	5.1	Performance data
0.41 / 0.45	0.41 / 0.45	0.41 / 0.45	0.41 / 0.45	0.41 / 0.45	5.2	
0.50 / 0.45	0.50 / 0.45	0.50 / 0.45	0.50 / 0.45	0.50 / 0.45	5.3	
0.30	0.30	0.30	0.30	0.30	5.4	
6	6	6	6	6	5.7	
electric / mechanical	electric / mechanical	electric / mechanical	electric / mechanical	electric / mechanical	5.10	
8.0	7.5	8.0	8.0	8.0	6.1	Electric-engine
2 x 15	2 x 12	2 x 15	2 x 15	2 x 15	6.2	
DIN A	DIN B	DIN A	DIN A	DIN A	6.3	
80/420	48/1085	80/560	80/700	80/840	6.4	
1360	1580	1600	1900	1900	6.5	
AC ~ MOSFET	AC ~ MOSFET	AC ~ MOSFET	AC ~ MOSFET	AC ~ MOSFET	8.1	
150	150	150	150	150	10.1	Addition data
6	6	6	6	6	10.2	
< 70	< 70	< 70	< 70	< 70	10.7	

MTC series

Models: MTC10, MTC13, MTC13LWB, MTC13 80, MTC15SWB, MTC15MWB, MTC15LWB

Forward mounted controls
Operator controls are adjustable in height, angle and plane, allowing perfect ergonomic operation in both seated and standing positions. Each truck function can be controlled without re-positioning the hands. Proportional control affords total control of the machine and turret head at all times allowing simultaneous multiple truck movements.

Seat sided controls
Seat side controls (optional) give the operator the ideal driving position with ultimate comfort, specifically designed for extended shift periods requiring a high through rate of pallet movements.

Drivers cabin
The cabin is equipped with a soft, non-slip rubber floor mat providing extra operator comfort. A large operator presence foot sensor mounted under the mat allows freedom of movement without confinement to a single position. The luxury driver's seat is height adjustable with an ergonomically designed high backrest, thick padding, 20 degrees of rotation with spring loaded return to centre plus 3 different locking positions. The operator can comfortably turn while traveling in the reverse direction. The fold up seat is padded on the underside allowing it to by used as a backrest while operating in the the standing position.

Visibility
The front lean bar with integrated screen allows full and un-obscured visibility of the forks, pallet and racking at all times, reducing the risk of product damage and allowing the operator to remain in a comfortable driving position.

Steering
Electronic steering utilizes direct drive to the steer wheel through a gear, employing an automotive style wheel with integral steering knob or optional return to center steering.

Auto centering with system check and calibration on 'power up' eliminates operator error when starting off.

Turret head
Designed for pallet handling in three different directions, configurations are available for various pallet dimensions.

Top and bottom mounting of the turret head gives excellent load stability at all times and at all lift heights. An integral pantograph hidden in the fork carriage allows the truck to operate in the smallest of aisles with maximum side operating clearances. Various different lift heights enable truck configurations to suit a customers' specific application. The truck features automatic synchro-nous fork rotation with operator graphical feedback on the user interface display.

Masts
Duplex or triplex masts in both a tri-form or quad-form provide excellent mast rigidity and stability, using a series of torsion tubes. The triplex mast is perfect for low door clearances or overhead obstruction which require a low closed height. The MTC15MWB and MTC15LWB utilize the Yale patented four point quad-form mast which provides exceptional rigidity at the highest of heights for operator comfort, stability and minimum aisle requirments. Rectangular steel cross members give torsional rigidity and minimise deflection enabling a reach height exceeding 16,000mm

AC technology
Three phase AC technology is employed on all traction and steering hydraulic motors. All four motors are sealed to prevent dust or dirt ingress to improve long term reliability and performance.

Brakes
Regenerative braking provides high efficiency and maintance free braking without wear to any of the components. An electric magnetic braking system secures the truck when stationary.

Hydraulics
The truck is equipped with proportional valve technology providing smooth control and movement of turret head functions. Two powerful hydraulic lift motors provide independent power, or they can be linked to allow ultimate control whilst operating any of the truck's functions simultaneously.

CAN-Bus communication system
All sensors, controls, hydraulic actuators and motor controls are networked together to share information and communicate with one another. Elimination of multiple wiring improves reliability, performing an array of truck functions for safe, controllable and rapid operation of the machine. Cabin height, turret head position and truck movement are continuously monitored so each function can operate at its optimum level. Operator pin numbers can give different performance settings to suit driver abilities and prevent unauthorized access. Service functions give engineers a comprehensive information and diagnostics, from current draws on motors to a history log of faults.

Guidance
Trucks are equipped with external guide wheels and an automatic aisle detection for rail guided applications. For Wire Guided applications, the truck quickly locks onto the wire when entering an aisle, if the guidance system isn't switched on, traction automatically reduces. If the truck is switched off while on the system, it automatically switches back onto the guidance system on re-start.

Options
- Cold storage -40ºC
- Shuttle table
- Pre-height selector
- Radio Data terminal wiring and bracket

- End of aisle controls
- Passcode start
- Mirrors
- Load wheel braking
- Zero thickness hydraulic fork positioner.
- Programmable cabin lift interrupts with override
- Seat side controls

Note:
SWB = Short Wheel Base
MWB = Medium Wheel Base
LWB = Long Wheel Base

MTC series

Models: MTC10, MTC13, MTC13LWB, MTC13 80, MTC15SWB, MTC15MWB, MTC15LWB

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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

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