

**TECNA, THE MOST EFFICIENT
AND RELIABLE, LOYAL AND
SECURE PARTNER FOR THE
LOGISTICS AND MAINTENANCE
OF YOUR COMPANY.**



**RANGE
TH**

TECNA
2000

Electric forklift truck

Four wheels, two front AC drive motor,
80 V., with TECNA technology
Vector control.

TH 40 AC · 4 Tn. C.G.C. a 500 mm. load center

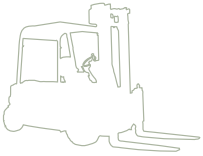
TH 45 AC · 4.5 Tn. C.G.C. a 500 mm. load center

TH 50 AC · 5 Tn. C.G.C. a 500 mm. load center

TH 56 AC · 5 Tn. C.G.C. a 600 mm. load center

TH 60 AC · 6 Tn. C.G.C. a 600 mm. load center





TH 40 AC · 4 Tn. C.G.C. a 500 mm. load center

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TH 56 AC · 5 Tn. C.G.C. a 600 mm. load center

TH 60 AC · 6 Tn. C.G.C. a 600 mm. load center

ALL TECHNOLOGICAL ADVANCES OF TECNA CONCENTRATED IN THIS NEW SERIES:



Security

Operation control system for speed reduction at curves (Anti turning)

System for lift speed reduction control (Anti turning).

System for speed reduction control in determined areas (High Security). (Optional).



Upright

Upright Duplex, Duplex F.L. and Triplex F.L., one perfect GRAN VISION (new generation).



Ergonomics

Operator compartment with the same dimensions, as those of a greater tonnage.

Manipulation by means of levers.

Great comfort seat safety belt, weight adjustment and height and leaning-back positioning.

LCD display with constant control of the machine functions.



Productivity

Three-phase AC drive motors, 80 V 2 x 10 kW .

Three-phase AC lift motor, 80 V and 22 kW .

TECNA Vector control.

TECNA Batteries:
TECNA Batteries from 750 A to 1120 A

Energy regeneration when braking.



Display

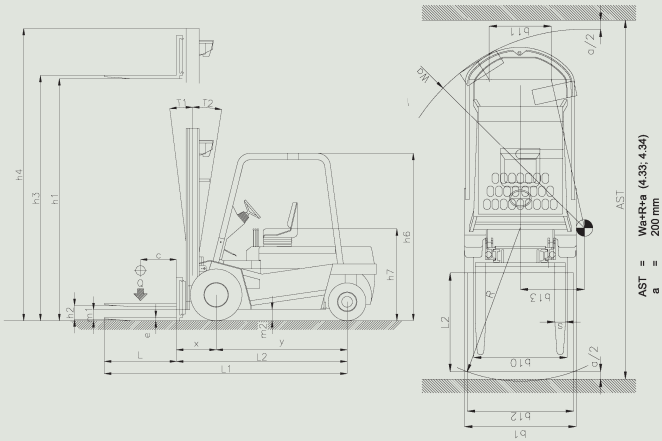
Display with digital hour meter, battery indicator and constantly providing the driver information on the system conditions of the truck.

P.M service count - down.

Programmable for optimum adaptation of truck characteristics to the operation request (Acceleration, speed, deceleration, braking, etc.)
Diagnosis information and warning indicators.

TECHNICAL SPECIFICATIONS ACCORDING TO VDI 2198

Distinguishing mark	1.1	Manufacturer (Abbreviation)		TECNA	TECNA	TECNA	TECNA	TECNA
	1.2	Manufacturer's type designation		TH-40	TH-45	TH-50	TH-56	TH-60
	1.3	Drive: Electric, Battery, Diesel, Petrol, Fuel gal		Battery				
	1.4	Operator type: Hand, Pedestrian, Standing, Seated		Seated				
	1.5	Load capacity / Rated load	Q (t)	4,0	4,5	4,99	5,0	6,0
	1.6	Load center distance	F (N)	500	500	500	600	600
	1.8	Load distance, centre of drive axle to fork	x (mm)	530	530	530	580	600
	1.9	Wheelbase	y (mm)	1810	1860	1860	2070	2300
Weight	2.1	Service weight (with standard battery)	kg	6900	7300	7752	7700	11000
	2.2	Axle loading, laden front/rear	kg	9864-1036	10688-1112	11122-1130	11750-950	15510-1490
	2.3	Axle loading, unladen front/rear	kg	3500-3400	3600-3700	3700-4052	3800-3900	6380-4620
Tyres, Chassis	3.1	Tyres: SE=Superelastic, N=Pneumatic		SE				
	3.2	Tyre size, front		250-15	250-15	250-15	28-12,5-15	355/65-15
	3.3	Tyre size, rear		21-8-9	21-8-9	21-8-9	23-9-10	23-9-10
	3.5	Wheels, number front/rear (x=driven wheels)		2x / 2	2x / 2	2x / 2	2x / 2	2x / 2
	3.6	Tread, front	b10 (mm)	1200	1200	1200	1230	1230
	3.7	Tread, rear	b11 (mm)	1150	1150	1150	1150	1150
Dimensions	4.1	Tilt of mast/fork carriage forward/backward	Grad	4 / 9	4 / 9	4 / 9	4 / 9	4 / 9
	4.2	Height, mast lowered	h1 (mm)	2340	2340	2340	2480	2480
	4.3	Free lift	h2 (mm)	100	100	100	100	100
	4.4	Lift height	h3 (mm)	3200	3200	3200	3200	3200
	4.5	Height, mast extended	h4 (mm)	4000	4000	4000	4150	4150
	4.7	Height of overhead guard (cabin)	h6 (mm)	2310	230	2310	2365	2385
	4.8	Seat height	h7 (mm)	1280	1280	1280	1350	1370
	4.12	Coupling height	h10 (mm)	590	590	590	640	640
	4.19	Overall length	l1 (mm)	3730	3865	3865	4240	4440
	4.20	Length to face of forks	l2 (mm)	2730	2865	2865	3040	3240
	4.21	Overall width	b1 (mm)	1360	1360	1420	1400	1590
	4.22	Fork dimensions	s/e/l (mm)	1000X150X50	1000X150X50	1000x150x60	1200X150X60	1200X150X60
	4.23	Fork carriage din 15173, class/type A, B		3A	3A	3A	4A	4A
	4.24	Fork-carriage width	b3 (mm)	1200	1200	1200	1300	1300
	4.31	Ground clearance, laden, below mast	m1 (mm)	132	132	150	182	200
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	150	150	150	200	220
	4.33	Aisle width for pallets 1000(L6)x1200(B12)	Ast (mm)	4060	4215	4215	4440	4900
	4.34	Aisle width for pallets 1200(L6)x800(B12)	Ast (mm)	4260	4415	4415	4640	4700
	4.35	Turning radius	Wa (mm)	2330	2485	2485	2660	2660
	4.36	Internal turning radius	b13 (mm)	700	700	700	770	770
Performances	5.1	Travel speed, laden/unladen	km/h	11-13	11-13	11-13	12-14	12
	5.2	Lift speed, laden/unladen	m/s	0,30-0,4	0,30-0,4	0,30-0,40	0,30-0,4	0,30-0,4
	5.3	Lowering speed, laden/unladen	m/s	0,4-0,35	0,4-0,35	0,4-0,35	0,4-0,35	0,4-0,35
	5.5	Drawbar pull, laden/unladen	N	900	900	900	900	900
	5.6	Max. Drawbar pull, laden/unladen	N	----	----	----	----	----
	5.7	Gradeability, laden/unladen S2 30 min.	%	15-18	15-18	15-18	15-18	12
	5.8	Max. Gradeability laden/unladen S2 5 min.	%	----	----	----	----	----
	5.9	Acceleration time, laden/unladen 10m	s	----	----	----	----	----
	5.10	Service brake		Hydr./Elect.				
Electric-Motor	6.1	Drive motor rating S2 60 min.	kW	12+12	12+12	12+12	12+12	12+12
	6.2	Lift motor rating S3 15%	kW	22	22	22	22	22
	6.3	Battery acc. to DIN 43531/35/36 A,B,C, no		no	no	no	no	no
	6.4	Battery voltage, nominal capacity k5	V/Ah	80 / 930	80 / 930	80 / 930	80 / 930	80 / 1085
	6.5	Battery weight	kg	2200	2200	2200	2300	2300
	6.6	Energy consumption acc. To VDI cycle	kWh/h	----	----	----	----	----
Addition data	8.1	Type of drive control		AC / Inverter				
	8.2	Operating pressure for attachments	bar	175	175	175	175	175
	8.3	Oil volume for attachments	l/min	----	----	----	----	----
	8.4	Sound level at the driver's ear acc. To DIN 12 053	dB (A)	----	----	----	----	----
	8.5	Towing coupling, type DIN		----	----	----	----	----



Load capacity

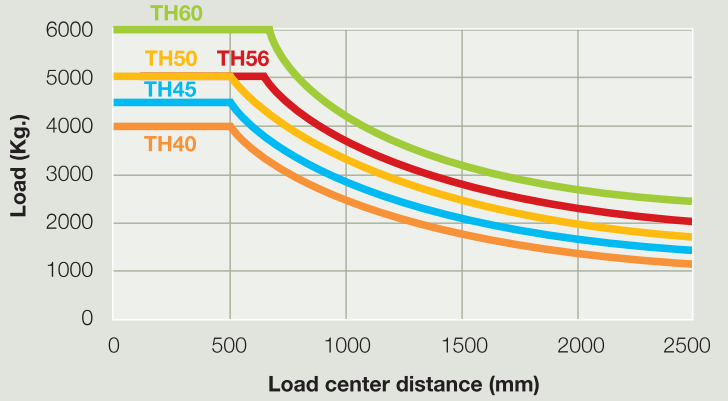


Table of masts

Designation	Lift height h3 mm		Free lift h2 mm			Height lowered upright h1 mm					Height extended upright h4 mm					Tilt Forward / Backward
	TH40-45-50-56	TH60	TH40-45-50	TH56	TH60	TH40	TH45	TH50	TH56	TH60	TH40	TH45	TH50	TH56	TH60	
DUPLEX	3600	3600	100	100	-	2480	2540	2540	2630	2680	4270	4390	4390	4520	4520	9 / 4
	4000	4000	100	100	-	2680	2740	2740	2780	2820	4670	4790	4790	4820	4870	9 / 4
	4500	4500	100	100	-	2980	2990	2990	3080	3120	5170	5330	5330	5320	5370	7 / 3
	-	5000	-	-	-	-	-	-	-	-	3380	-	-	-	-	5870
DUPLEX Free lift	2800	2800	1455	1330	1350	2120	2120	2120	2120	2240	3465	3465	3465	3600	3630	9 / 4
	-	3000	-	-	1450	-	-	-	-	2340	-	-	-	-	3830	
	3200	3200	1655	1530	1550	2220	2220	2320	2320	2440	3865	3865	3865	4000	4030	9 / 4
	3600	3600	1855	1730	1750	2520	2520	2520	2520	2640	4265	4265	4265	4400	4430	9 / 4
4000	4000	2005	1930	1950	2720	2720	2720	2720	2840	4665	4665	4665	4800	4830	9 / 4	
TRIPLEX	4500	4200	1640	1450	1210	2320	2320	2320	2320	2290	5200	5200	5200	5340	5040	7 / 3
	4700	4700	1695	1950	1460	2370	2370	2370	2370	2440	5400	5400	5400	5510	5510	7 / 3
	5200	5200	1795	1700	1630	2470	2470	2470	2570	2590	5900	5900	5900	6100	6100	7 / 3
	5600	5600	1995	1850	1780	2670	2670	2670	2720	2740	6400	6400	6300	6500	6500	6 / 2
	-	6000	-	-	1930	-	-	-	-	-	2890	-	-	-	-	6900
6400	6400	2190	2250	2080	2870	2870	2870	3020	2990	7100	7100	7100	7210	7210	6 / 0	

Table of load capacities (kg)

Model	TH 40				TH 45				TH 50				TH 56				TH 60																																																																																																																
Superelastic tyre	250-15								250-15								250-15								28-12, 5-15								3505/65-15																																																																																																
Tread, front	1200								1200								1200								1230								1230																																																																																																
Designation	Fork carriage		Integrated sideshift		Fork carriage		Integrated sideshift		Fork carriage		Integrated sideshift		Fork carriage		Integrated sideshift		Fork carriage		Integrated sideshift		Fork carriage		Integrated sideshift																																																																																																										
	c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)		c (mm)																																																																																																										
	500	600	500	600	500	600	500	600	500	600	500	600	500	600	600	700	600	700	600	700	600	700	600	700																																																																																																									
DUPLEX	3900	3700	3800	3500	4400	4050	4300	3850	4900	4500	4800	4300	4900	4500	4800	4300	5700	5300	5600	5100	3800	3500	3600	3300	4300	4000	4100	3750	4700	4400	4500	4200	4700	4400	4500	4200	5500	5100	5300	4900	3700	3400	3500	3200	4150	3850	3950	3650	4650	4350	4400	4150	4600	4350	4400	4150	5300	5000	5100	4800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5100	4900	4900	4700																																									
	4000	3700	3800	3500	4500	4050	4300	3850	4990	4500	4800	4300	5000	4500	4800	4300	6000	5500	5800	5300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6000	5500	5800	5300	4000	3700	3800	3500	4500	4050	4300	3850	4990	4500	4800	4300	5000	4500	4800	4300	6000	5500	5800	5300	3900	3700	3800	3500	4400	4050	4300	3850	4900	4500	4800	4300	4900	4500	4500	4300	5700	5300	5600	5100	3800	3500	3600	3300	4300	4000	4100	3750	4700	4400	4500	4200	4700	4400	4500	4200	5500	5100	5300	4900																							
	DUPLEX Free lift	3500	3300	3300	3000	3950	3650	3750	3450	4400	4150	4200	3950	4400	4150	4200	3950	5300	5000	5100	4800	3450	3200	3250	2950	3850	3600	3650	3400	4300	4050	4100	3850	4300	4050	4100	3850	5200	4950	5000	4750	3400	3100	3200	2900	3800	3550	3600	3350	4200	4000	4000	3800	4200	4000	4000	3800	5000	4800	4800	4600	3300	3000	3100	2800	3500	3300	3300	3100	3900	3700	3700	3550	3900	3700	3700	3500	4700	4500	4500	4300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4500	4300	4300	4100	3000	2700	2800	2500	3200	3000	3000	2800	3600	3400	3400	3200	3600	3400	3400	3200	4300	4150	4100	3950
		TRIPLEX	3500	3300	3300	3000	3950	3650	3750	3450	4400	4150	4200	3950	4400	4150	4200	3950	5300	5000	5100	4800	3450	3200	3250	2950	3850	3600	3650	3400	4300	4050	4100	3850	4300	4050	4100	3850	5200	4950	5000	4750	3400	3100	3200	2900	3800	3550	3600	3350	4200	4000	4000	3800	4200	4000	4000	3800	5000	4800	4800	4600	3300	3000	3100	2800	3500	3300	3300	3100	3900	3700	3700	3550	3900	3700	3700	3500	4700	4500	4500	4300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4500	4300	4300	4100	3000	2700	2800	2500	3200	3000	3000	2800	3600	3400	3400	3200	3600	3400	3400	3200	4300	4150	4100

Specifications are without obligations for typographical errors.

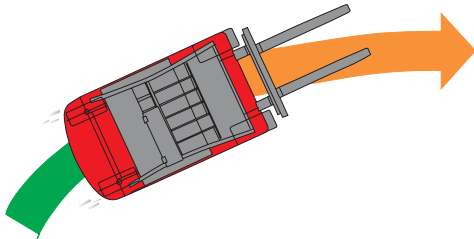
¿Danger?

GET TO KNOW THE ACTIVE SECURITY OF FORKLIFT TRUCKS TECNA AND COOL DOWN.



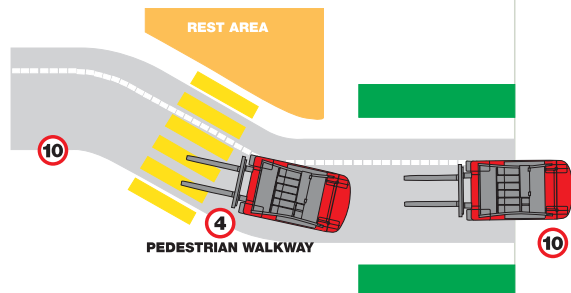
1 Anti-overturning electronic system

When turning, the forklift truck TECNA 2000 reduces its speed proportionally to the curve degrees.



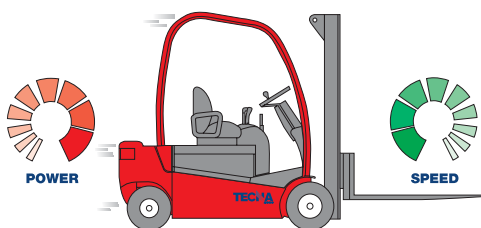
2 Speed limitation in predetermined zones*

Automatic system for predetermination of maximal speed in different areas of work.
*(optional)



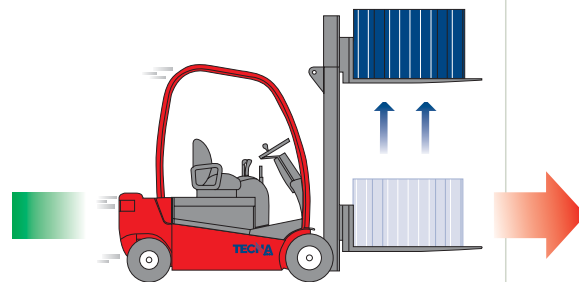
3 Speed and power control

The forklift truck TECNA 2000 disposes of device for speed limitation without power loss.



4 Speed limitation with lifting device

When lifting the cargo at a determined altitude, the speed of forklift truck displacement is automatically reduced.



Technical data and specifications of forklift truck TECNA version with four wheels, front wheel drive 80 V. Vector control.

Series TH 40/45/50/56/60: 4, 4.5, 5 Tn. 500 mm load center and 5, 6 Tn. 600 mm load center

Driving

The forklift truck operation has exceptional ergonomic conditions. Easy access to operator compartment due to its low height of construction (550 mm). The steering column multi-positioning and the seat adjusted in height and resting, allows adaptation to the body characteristics of each person. The pedals are of automation type making easy the adaptation to driving the truck. Hydraulic levers, positioned where the hand reaches automatically, enables sensitive and precise control of all grand visibility mast movements (Tilting, lifting and download).

The hydrostatic steering is operated without any effort, the system for actuating the pump functions only is required by the steering-wheel guaranteeing great energy saving. The vector control system permits easy change, from forward to reverse, and offering easy and smooth dynamic operation. The noise level in operator's ears is according to Standard DIN 12 053 < 65 dB.

Motors and technologies AC

The drive motors, as well as the hydraulic one are CA, class F with protection IP20, without carbon brushes nor collector are prepared for the hardest applications. In case of contaminated atmosphere, they are dust and dirtiness resistant. The availability for selection of systems with different output, gives acceleration and one very good lifting capacity. This is one of the greatest advantages of AC. This technology permits the machine components to be revised and checked at longer periods of time, which significantly reduces the costs for maintenance.

Masts

High visibility, Duplex, Duplex free lift and Triplex free lift. Nested U profiles exceptionally torsion-resistant with adjustable

rollers greased for life. The mast are mounted on special bushing and linked with tilt cylinders to the frame. The big overlap between profiles gives a height grade of stability to de assembly, which with a motor pump of 22 KW allows to lift at high speed and very good performance.

Vector control

The Vector control follows the Frequency Control (motion control, Slip Control) in the whole range of counterbalance forklift trucks and tow tractors Tecna. This technology eliminates all components related to wear-out and maintenance (unlimited functioning). The module system of power equipments (invertors), interchangeable in between them, with a map for general control for all analogue and digit signals of the system, operated by powerful microprocessors (DSP), and the motor mathematically driven in real time gives maximal result (Vector Modulation). The system allows machine high stability in its all three stages of operation (low, standard, high average and high), obtaining high levels of output and efficiency due to its dynamic concept. The display provides the following stages of information: usage, diagnosis, calibration and signalization. All this includes a new range of motors, which do not require maintenance, moreover, a new secure generation has been used. The combination of all these systems protects against overheating in the system, which is in direct ration to battery autonomy.

Transmission

Front dual drive transmission, with motors 10 + 10K, with two gear boxes formed by two independent parts, the gear box and the braking housing, where the multidiscs brake system, in oil bath, is located. The big size superelastic tyres gives to the transmission set big stability and very good performance

Steering Axle

The steering axle incorporate, as a new feature, a turning radius up to 185°fs26, which permits an improved maneuvering compared to the traditional three wheels forklift trucks. The axle has two identical

integrates two identical wheels of 16/6", which significantly improves the stability and maintenance of rear axle.

Hydraulic system

The big reservoir for hydraulic oil is integrated to the frame structure, due to which the liquid refrigeration is aided to a great extent from this configuration. The sections for oil conduction are short, without curves, no prerequisites for energy loss from rubbing or friction heating are generated. It incorporates safety valves in elevation and descent and auxiliary valves for overpressure. In the tilting circuit there is an anti-cavity system. In the retard circuit is incorporated a filter of 25 microns. The main hydraulic valve may incorporate one 4th functions and auxiliary electrovalves.

Brakes

The front axle brakes are multidisc system in constant bath of oil, actuated by a pedal of «automation» type heaving long life. Electronic breaking with energy recovery. Hand brake for parking. Proportional electronic brake.

Frame

The frame designed by means of a computer using the system for finite methods, forms a very stable and robust set, integrating also the motors and the steering axle.

Battery

The serial battery TECNA perfectly fits its place, fixed in operating position by means of a well designed access, which secures protection from the truck roof to the driver. For that reason its extraction and placement back is realized in very short time.

CE

Security. This family of machines completely meets the actual Standards of CEE. The specifications may be changed and modified without preliminary notification.

Official distributor:



Pol. Ind. Arazuri-Orcoyen, C 5-7 Str.
31170 ARAZURI (Navarra)
Tel.: +34 948 324 660
Fax: +34 948 324 404
E-mail: tecna2000@tecna2000.com
www.tecna2000.com



Tecna 2000 possesses certificates for legal audits under the system for labour safety carried out by A.S.G. (Audit Management Systems).