

**Jungheinrich proprietary AC technology in drive, lift and steer motors**

**Improved maneuverability due to a compact chassis design**

**Electric 180° steering**

**A smooth hydraulic operation using the SOLO-PILOT control lever**

**Greater operating performance with Curve Control**



## **ETV 110/112/114/116**

### **Electric Reach Truck (2200, 2600, 3000, 3500 lbs.)**

Space-saving construction, excellent performance and a comfortable working area — these are the strengths of the Jungheinrich Reach Trucks ETV 110 to 116.

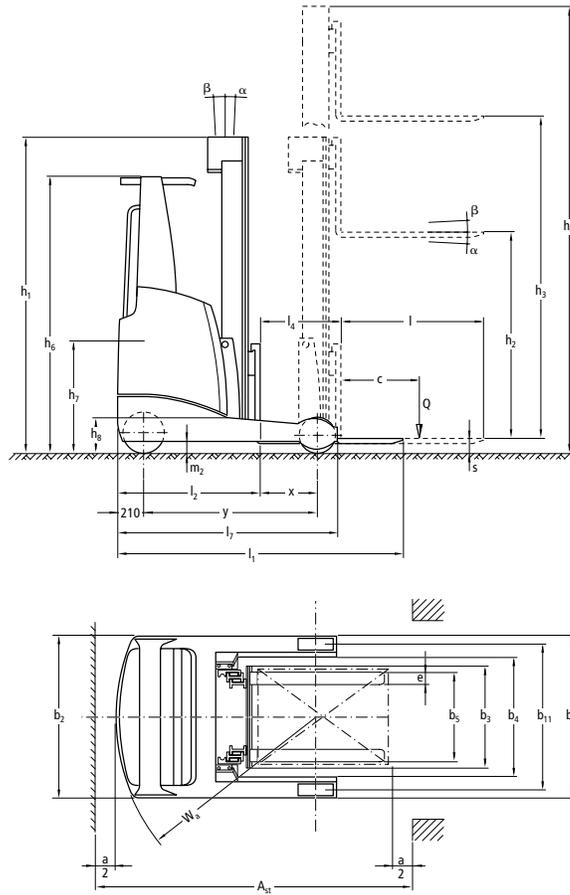
**The key advantages:**

- Space-saving through narrow working aisle widths from 105 inches. With its slim support arms, the ETV 110/112 can pull a Euro pallet back between the support arms — despite its compact chassis of only 44 inches. This creates more room during operation with oncoming traffic in block stacking aisles or in drive-in racking.

- Higher throughput — as well as reduced downtime — due to 3-phase AC technology on drive, lift and steer motors.
- Motivated and stress-free operators due to superior ergonomics. As operators enter the spacious cab area, they are immediately aware of the added comfort. They are able to adjust everything from the seat, armrest and steering wheel in both horizontal and vertical directions.
- Automatic speed reduction on corners. Curve Control limits maximum travel speed and acceleration on corners.

Overall the Jungheinrich Series 1 Reach Trucks provide the best solution for cost effective stacking and retrieval at high lift heights and in confined spaces. Be it during the handling of pallets (operating in drive-in racking), in narrow or low areas or single or multi-shift applications – the series 1 Reach Trucks are suited to every application.

# ETV 110/112/114/116



**Mast Table ETV 110/112/114/116**

Designation	Collapsed mast height $h_1$ inches	Lift height $h_3$ inches	Free lift $h_2^*$ inches	Extended mast height $h_4^*$ inches	Mast tilt forward/backward $\alpha^\circ/\beta^\circ$	Designation	Collapsed mast height $h_1$ inches	Lift height $h_3$ inches	Free lift $h_2^*$ inches	Extended mast height $h_4^*$ inches	Mast tilt forward/backward $\alpha^\circ/\beta^\circ$	
Two-stage ZT ETV 110/112	80.7	121.6	3	162	2/5	Two-stage ZT ETV 114/116	76.8	114.2	3	154	2/5	
	86.6	133.5	3	173	2/5		80.7	122.0	3	162	2/5	
	90.5	141.3	3	181	2/5		86.6	133.8	3	174	2/5	
	94.5	149.2	3	189	2/5		90.5	141.7	3	182	2/5	
Three-stage DZ ETV 110/112	80.7	179.1	41	219	2/5		94.5	149.6	3	189	1/5	
	86.6	196.8	47	237	1/3		98.4	157.5	3	197	1/5	
	89.8	206.3	50	246	1/3		106.3	173.2	3	213	1/5	
	90.5	208.7	51	249	1/3		Three-stage DZ ETV 114/116	80.7	179.1	41	219	1/5
	94.5	220.5	55	260	1/3			86.6	196.8	47	237	1/5
	98.4	232.3	59	272	1/3			89.8	206.3	50	246	1/5
	102.4	244.1	62	284	1/3	90.5		208.7	51	249	1/5	
	106.3	255.9	66	296	1/3	94.5		220.5	55	260	1/3	
110.2	267.7	70	308	1/3	98.4	232.3		59	272	1/3		
114.2	279.5	74	319	1/3	102.4	244.1		62	284	1/3		
						106.3		255.9	66	296	0.5/2	
						110.2	267.7	70	308	0.5/2		
						114.2	279.5	74	319	0.5/2		
						119.0	291.0	78	331	0.5/1		
						122.0	303.1	82	343	0.5/1		

\*Includes standard load backrest with height 39.4 inches.

# Technical Data

as of: 01/2010

Identification	1.1	Manufacturer (abbreviation)	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	1.1		
	1.2	Manufacturer's type designation	<b>ETV 110</b>	<b>ETV 112</b>	<b>ETV 114</b>	<b>ETV 116</b>	1.2		
		G = fork; E = integrated sideshift	GE	GE	GE	GE			
	1.3	Drive type	electric	electric	electric	electric	1.3		
	1.4	Type of operation	seated	seated	seated	seated	1.4		
	1.5	Load capacity / rated load	Q (lbs)	2000	2400	2800	3200	1.5	
	1.6	Load center distance	c (inches)	23.6	23.6	23.6	23.6	1.6	
	1.8	Load distance, center of drive axle to fork	x (inches)	13.6 <sup>1)</sup>	16.9 <sup>1)</sup>	16.4 <sup>1)</sup>	15.5 <sup>1)</sup>	1.8	
	1.9	Wheelbase	y (inches)	51.2	54.5	55.5	57.5	1.9	
Weights	2.1	Service weight	lbs	5644	5688	6504	6768	2.1	
	2.3	Axle loading, unloaded drive/load	lbs	3499 / 2145	3499 / 2189	3902 / 2601	4060 / 2707	2.3	
	2.4	Axle loading, fork advanced, loaded drive/load	lbs	1398 / 6451	1138 / 7196	1151 / 8439	1235 / 9061	2.4	
	2.5	Axle loading, fork retracted, loaded drive/load	lbs	2826 / 5022	3000 / 5333	3452 / 6138	3706 / 6590	2.5	
	Wheels, Chassis	3.1	Tires	Vulkollan	Vulkollan	Vulkollan	Vulkollan	3.1	
3.2		Tire size, drive wheel	inches	13.5x4.5	13.5x4.5	13.5x4.5	13.5x4.5	3.2	
3.3		Tire size, load wheel	inches	9.0x3.3	9.0x3.3	11.2x3.9	11.2x3.9	3.3	
3.5		Wheels, number drive, load (x = driven wheels)		1x / 2	1x / 2	1x / 2	1x / 2	3.5	
3.7		Track width, load side	b <sub>11</sub> (inches)	39.1	39.1	44.7	44.7	3.7	
4.1		Mast / fork carriage tilt forward / backward	degrees	2° / 5° <sup>2)</sup>	2° / 5° <sup>2)</sup>	1° / 5° <sup>2)</sup>	1° / 5° <sup>2)</sup>	4.1	
4.2		Collapsed mast height	h <sub>1</sub> (inches)	90.6	90.6	90.6	90.6	4.2	
Basic Dimensions	4.3	Free lift	h <sub>2</sub> (inches)	51 <sup>6)</sup>	51 <sup>6)</sup>	51 <sup>6)</sup>	51 <sup>6)</sup>	4.3	
	4.4	Lift height	h <sub>3</sub> (inches)	208.7	208.7	208.7	208.7	4.4	
	4.5	Extended mast height	h <sub>4</sub> (inches)	249 <sup>6)</sup>	249 <sup>6)</sup>	249 <sup>6)</sup>	249 <sup>6)</sup>	4.5	
	4.7	Overhead load guard (cab) height	h <sub>6</sub> (inches)	84.6	84.6	84.6	84.6	4.7	
	4.8	Seat height / standing height	h <sub>7</sub> (inches)	37.8	37.8	37.8	37.8	4.8	
	4.10	Height of wheel arms	h <sub>8</sub> (inches)	10.4	10.4	11.2 <sup>5)</sup>	11.2 <sup>5)</sup>	4.10	
	4.19	Overall length	l <sub>1</sub> (inches)	91.1 <sup>1)</sup>	91.1 <sup>1)</sup>	92.4 <sup>1)</sup>	95.2 <sup>1)</sup>	4.19	
	4.20	Length to face of forks	l <sub>2</sub> (inches)	45.9 <sup>1)</sup>	45.9 <sup>1)</sup>	47.1 <sup>1)</sup>	49.9 <sup>1)</sup>	4.20	
	4.21	Overall width	b <sub>1</sub> /b <sub>2</sub> (inches)	44.1 / 44.1	44.1 / 44.1	50.0 / 50.0	50.0 / 50.0	4.21	
	4.22	Fork dimensions	s/e/l (inches)	1.6 / 3.1 / 45.3	1.6 / 3.1 / 45.3	1.6 / 4.7 / 45.3	1.6 / 4.7 / 45.3	4.22	
	4.23	Fork carriage, class / type A, B		2 / B	2 / B	2 / B	2 / B	4.23	
	4.24	Fork-carriage width	b <sub>3</sub> (inches)	31.5	31.5	31.5	31.5	4.24	
	4.25	Width across forks min/max	b <sub>5</sub> (inches)	11.7 / 26.6	11.7 / 26.6	13.2 / 27.9	13.2 / 27.9	4.25	
	4.26	Distance between support arms / loading surfaces	b <sub>4</sub> (inches)	35.4	35.4	36.7	36.7	4.26	
	4.28	Reach distance	l <sub>4</sub> (inches)	20.3 <sup>1)</sup>	23.6 <sup>1)</sup>	24.5 <sup>1)</sup>	23.6 <sup>1)</sup>	4.28	
	4.32	Ground clearance, center of wheelbase	m <sub>2</sub> (inches)	3.1	3.1	3.1	3.1	4.32	
	4.33	Aisle width for pallets 48 x 40 crossways	Ast (inches)	102.5 / 93.3 <sup>3)</sup>	103.3 / 91.1 <sup>3)</sup>	104.3 / 94.3 <sup>3)</sup>	106.9 / 97.2 <sup>3)</sup>	4.33	
4.34	Aisle width for pallets 32 x 48 lengthways	Ast (inches)	104.7 / 101.2 <sup>3)</sup>	104.8 / 101.0 <sup>3)</sup>	106.0 / 102.2 <sup>3)</sup>	108.7 / 105.0 <sup>3)</sup>	4.34		
4.35	Turning radius	Wa (inches)	59.6	62.8	63.5	65.5	4.35		
4.37	Length across wheel arms	l <sub>7</sub> (inches)	64.6	68.0	70.6	72.5	4.37		
Performance Data	5.1	Travel speed, loaded / unloaded	mph	6.8 / 6.8 <sup>4)</sup>	6.8 / 6.8 <sup>4)</sup>	6.2 / 6.2 <sup>4)</sup>	6.2 / 6.2 <sup>4)</sup>	5.1	
	5.2	Lift speed, loaded / unloaded	ft/min	94.5 / 137.8	84.6 / 137.8	72.8 / 128.0	65.0 / 118.1	5.2	
	5.3	Lowering speed, loaded / unloaded	ft/min	98.4 / 98.4	98.4 / 98.4	98.4 / 98.4	98.4 / 98.4	5.3	
	5.4	Reach speed, loaded / unloaded	ft/min	39.4 / 39.4 <sup>2)</sup>	39.4 / 39.4 <sup>2)</sup>	39.4 / 39.4 <sup>2)</sup>	39.4 / 39.4 <sup>2)</sup>	5.4	
	5.7	Gradient performance, loaded / unloaded	%	7 / 10	7 / 10	7 / 10	7 / 10	5.7	
	5.8	Max. gradient performance, loaded / unloaded	%	10 / 15	10 / 15	10 / 15	10 / 15	5.8	
	5.9	Acceleration time, loaded / unloaded	s	4.8 / 4.4	4.9 / 4.4	5.1 / 4.8	5.2 / 4.8	5.9	
	5.10	Service brake		electric	electric	electric	electric	5.10	
	E-Motor	6.1	Drive motor rating 60 min	hp	9.3	9.3	9.3	9.3	6.1
		6.2	Lift motor rating at 15%	hp	13.4	13.4	13.4	13.4	6.2
6.4		Battery voltage	V	48	48	48	48	6.4	
		Battery, nominal capacity	Ah	280 <sup>1)</sup>	280 <sup>1)</sup>	420 <sup>1)</sup>	420 <sup>1)</sup>		
6.5		Battery weight min.	lbs	1226	1266	1653	1653	6.5	
		Battery dimensions	l/w/h inches	40.7/10.4/30.9	40.7/10.4/30.9	48.1/11.1/30.9	48.1/11.1/30.9		
Other Details	8.1	Type of drive control		MOSFET/AC	MOSFET/AC	MOSFET/AC	MOSFET/AC	8.1	
	8.2	Operating pressure for attachments	psi	2175	2175	2175	2175	8.2	
	8.3	Oil volume for attachments	gal/min	5.3	5.3	5.3	5.3	8.3	
	8.4	Sound level at driver's ear	dB (A)	68	68	68	68	8.4	

1) other battery sizes change these values 2) dependent on mast 3) for floor storage 4) in load direction 6.2 mph 5) with load wheel covering + 1.2 inches 6) includes backrest with height of 39.4 inches

This specification sheet only provides technical values for the standard truck. Non-standard tires, different masts, additional equipment, etc. could produce other values. Right reserved for technical changes and improvements.

# The Jungheinrich Advantage

## High performance mast

Jungheinrich masts guarantee maximum storage utilization to high lift heights. Their strengths:

- Excellent visibility towards the load.
- Integrated side shift.
- Patented mast reach cushioning.
- Lowest closed mast height with high lift heights.
- Extremely long service life due to high quality mast profiles.
- High residual capacities up to high lift heights.
- Lift heights up to 234 inches with mast tilt.



Ergonomic cab

## Ergonomic cab

The operator's cab provides ideal working conditions for excellent performance and comfort for the operator. Its strengths:

- Comfortable seat with adjustment options (sitting position, backrest, body weight) for every operator.
- Various storage facilities.
- The important operating functions are easily accessible without reaching around.
- Generous space.
- 3-phase AC steering (180°) or as an option (360°) with stress-free steering wheel positioning.
- Horizontal / vertical steering wheel adjustment.



SOLO-PILOT

## Effortless operation with SOLO-PILOT

Incorporating the control levers for all hydraulic functions as well as travel direction selection and horn.

- All operating functions are in view.
- Additional attachments, such as fork spreaders (optional), are also easily controlled with the SOLO-PILOT.
- Precise operation through sensitive control of all functions.
- Comfortable working position with adjustable armrest.

## Easily-to-read operator display

All operating information displayed at a glance:

- Travel direction and wheel position indicator.
- 180°/360° steering mode.



The correct chassis for every application

- Battery discharge display with residual running time.
- Three adjustable travel programs to suit every requirement.
- Operating hours and time.
- Lift height (optional).

## Jungheinrich proprietary 3-phase AC technology

Powerful 3-phase AC technology for drive, lift and steering motors provides a number of advantages compared with traditional direct current motors.

- Powerful acceleration.
- Fast reversing with no hesitation.
- High availability through maintenance-free motors with no carbon brushes.
- Longer operating times due to energy reclamation when the truck brakes.
- 2-year warranty on drive and lift motors.

## A chassis width for every application

The correct chassis width for the appropriate application. ETV 110/112 (outer chassis width 44 inches) for drive in racking or block stacking aisle. ETV 114/116 (outer chassis width 50 inches) for high capacities and high lift heights. Both trucks can pick up a Euro pallet length ways between the support arms.



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Well worthwhile