

Automated, reliable and efficient for performing routine tasks

Optimized transport routes

Utilization of existing routes

Short payback period

Manual or fully-automated operation



## EZS 350a NA

### Automated Guided Vehicle (AGV) System, Electric Tow Tractor (11,000 lb.)

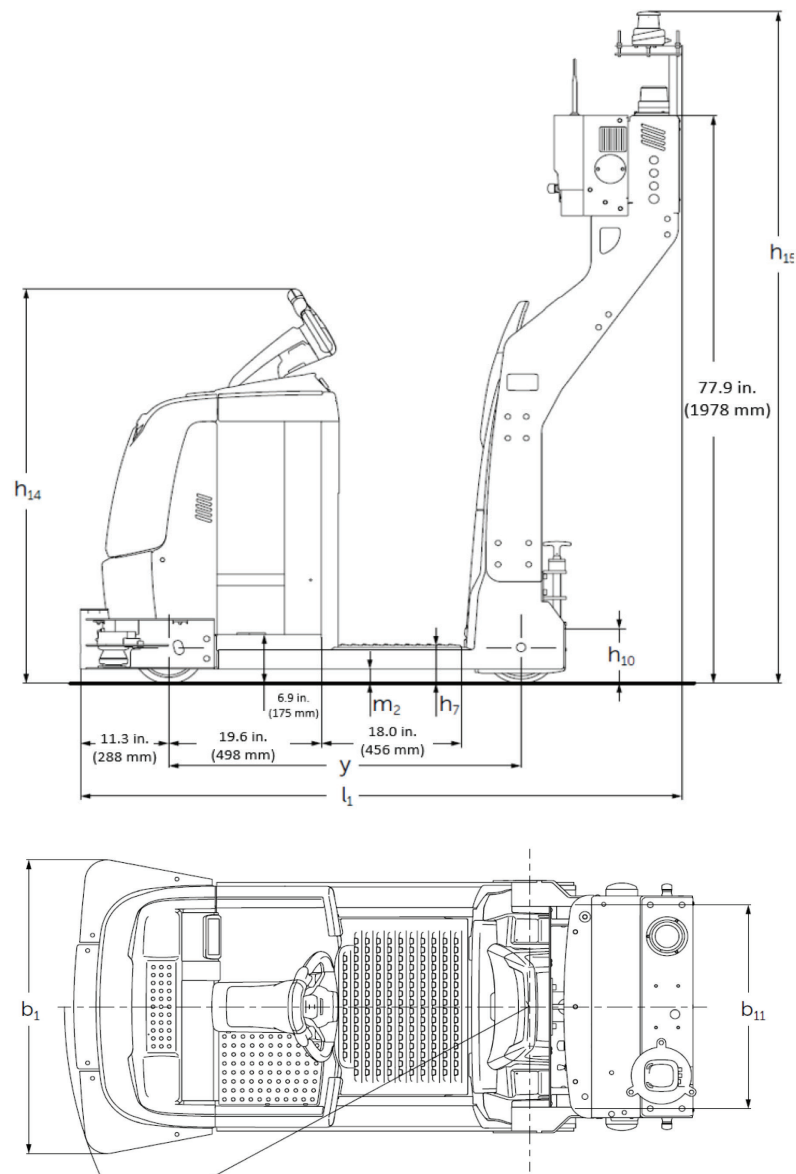
The EZS 350a is an Automated Guided Vehicle based on our standard series truck. It combines proven mechanical engineering with precision navigation technology. This helps ensure reliable and efficient production. The EZS 350a can be used in mixed operations mode with manual trucks and pedestrians. Regardless of whether you integrate it in existing factory structures or use it in a new building, the EZS 350a is the perfect choice when it comes to raising the efficiency of your processes. The EZS 350a uses laser navigation so no floor work is required. Reflectors are attached to suitable objects along the travel route such as racking, columns and walls, natural landmarks can also be used.

Using the EZS 350a will improve your work processes. The automated handling of standardised transport processes, e.g. for production supply, relieves strain on the employees with respect to additional transport tasks and gives them the opportunity to concentrate on their main tasks. Our AGV system can easily be integrated into the existing IT and software landscape. Our award-winning Jungheinrich Logistics Interface facilitates a smooth connection to a host system, such as the Jungheinrich WMS or other available WMS/ERP systems. However, you can also use your AGV system as a stand-alone system, i.e. as an autonomous system without a host connection.

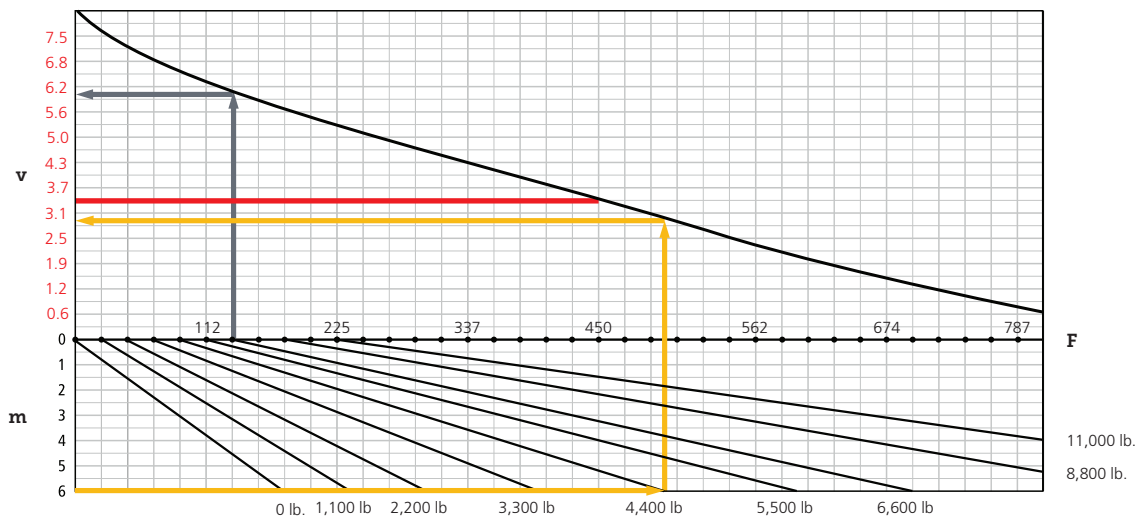
The modular system structure creates the best conditions for representing individual customer processes as well as reacting flexibly and quickly to process changes. This creates a solid basis for efficient use, according to your requirements.

 **JUNGHEINRICH®**

# EZS 350a NA



Performance Diagram EZS 350a NA



## Speed in automatic mode

Maximum speed in automatic mode 3.4 mph (red line in diagram). Optional raised travel speed with additional sensor.

## Reading examples:

1. The EZS 350a NA operates with a 6,600 lb. load on a level surface. To do this, it requires a drawbar pull of 135 lbs. and can achieve an approximate speed of 6.1 mph.
2. The EZS 350a NA is able to drive up a 6% gradient with a 4,400 lbs. load. To do this, it requires a drawbar pull of 501 lbs. and can achieve an approximate speed of 2.9 mph.

## Notes:

Continuous operation not possible for the EZS 350a NA above 224.8 lbs.

For inclines greater than 4% it is recommended that braked trailers be used.

$v$  = speed (mph) |  $m$  = incline (%) |  $F$  = drawbar pull (lbs.)

# Technical data

as of: 01/2019

Characteristics	1.1	Manufacturer				Jungheinrich			
	1.2	Model				EZS 350a NA			
	1.3	Drive				electric			
	1.4	Type of operation				AGV			
	1.5	Load capacity / rated load	Q	lb	kg	11,000		5,000	
	1.7	Rated drawbar pull	F	lb-force	N	225		1,000	
Weights	1.9	Wheelbase	y	in	mm	46.9		1,149	
	2.1	Service weight without battery		lb	kg	2,939		1,333	
	2.3	Axle loading, no load, front / rear		lb	kg	1,310	1,629	594	739
Wheels, Chassis	3.1	Tire type / material				Vulkollan®			
	3.2	Tire size (drive)		in	mm	9.1 x 3.0		230 x 77	
	3.3	Tire size (rear)		in	mm	9.8 x 3.1		250 x 80	
	3.5	Wheels, number, steer / load (x=driven)				1x / 2			
	3.6	Tread width, rear	b <sub>11</sub>	in	mm	26.8		680	
Dimensions	4.2.1	Total height (incl. scanner)	h <sub>15</sub>	in	mm	89.5		2,273	
	4.8	Step height	h <sub>7</sub>	in	mm	4.9		125	
	4.12	Coupling height	h <sub>10</sub>	in	mm	6.2 <sup>2)</sup>		158 <sup>2)</sup>	
	4.19	Overall length	l <sub>1</sub>	in	mm	77.2 <sup>5)</sup>		1,962 <sup>5)</sup>	
	4.21	Overall width	b <sub>1</sub> / b <sub>2</sub>	in	mm	38.6		980	
	4.32	Ground clearance at center of wheelbase	m <sub>2</sub>	in	mm	2.0		50	
	4.33	Minimum outside turning radius	Wa	in	mm	57.7		1,466	
Performance	5.1	Travel speed, loaded / no load		mph	km/h	5.0 / 7.8 <sup>1) 4)</sup>		8.0 / 12.5 <sup>1) 4)</sup>	
	5.5	Drawbar pull, loaded / no load		lb - force	N	225 <sup>3)</sup>		1,000 <sup>3)</sup>	
	5.6	Maximum drawbar pull, loaded / no load		lb - force	N	832		3,700	
	5.10	Brakes – service				reverse current / regenerative			
	5.11	Brakes – parking				automatic electric spring loaded			
Electrical	6.1	Drive motor (rating 60 min.)		HP	kW	3.8		2.8	
	6.4	Battery voltage / nominal capacity K5		V	Ah	24 / 620			
	6.5	Battery weight, minimum / maximum		lb	kg	consult factory			
	6.5.1	Battery dimensions (length x width x height)		in	mm	consult factory			
Other	8.1	Type of drive control				AC speedCONTROL			
	8.4	Sound level at driver's ear		dB(A)		66			
1) In manual operation 2) Other coupling heights available 3) Nominal tractive power 4) See diagram 5) Without option S3000, without tow hitch, as different tow hitch types (lengths) are available									

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

# The Jungheinrich Advantage



Additional personal protection scanner for higher travel speeds (optional)



Different couplings available (optional)



Floor Spot (optional)



jetPILOT steering wheel

## Established standard truck used as basis

The basis of the EZS 350a NA is the EZS 350NA / EZS 350XL electric tow tractor. The EZS 350a NA comprises this tried and tested standard truck with an extensive navigation and automation system. This means that, in addition to reliability and efficiency, the EZS 350a NA also offers other benefits of the standard truck:

- 24-V 3-phase AC drive motor
- No carbon brushes: Maintenance-free drive motor
- Robust design
- Compact design
- jetPILOT steering wheel

## High level of flexibility

Despite the automation features, the EZS 350a NA can also function fully as a manual truck. Surface transport can therefore be reliably carried out by the EZS 350a NA, while distribution of the goods can also be undertaken by an employee. The optional comfort terminal enables employees to determine the next destination of the EZS 350a NA and simply enter it with just one click at the truck.

## Everything at a glance – with the AGV control panel

The visualization on the AGV control panel displays all the information relating to the EZS 350a NA. This provides a rapid overview of the current status of transport tasks. Prioritised orders can also be entered and processed in the corresponding order.

## Integration into existing systems

Our Jungheinrich AGV system can easily be integrated into the existing IT and software landscape. The existing WLAN structure is used for communication with the EZS 350a NA. If an existing host system, such as the Jungheinrich WMS or another WMS/ERP system is to be used, the AGV system can be connected to this system via the Jungheinrich Logistics Interface.

## Precise navigation

The high degree of precision allows for pinpoint accuracy in the positioning of trucks and loads at defined stations. Different navigation types can be used for the EZS 350a NA, as with the other AGV models. These are designed and specified according to project and can also be used as hybrid navigation.

## Lithium-ion technology (optional)

- High utilization thanks to extremely short charging times.
- No battery exchange required.
- Cost savings due to longer service life and low maintenance compared with lead-acid batteries.
- No charging rooms and ventilation required as there is no build up of gas.

## Parts when you need them

Jungheinrich's Parts Fast or Parts Free Guarantee ensures next-business-day delivery by 5:00 PM of all Jungheinrich parts in the United States, or they're free, including freight. For customers in Canada and Mexico, the guarantee ensures shipping of parts within 24 hours from the time the order was placed by the dealer. See your local Jungheinrich dealer for program details.

- \* Programs may be subject to change without notice and may vary by region. Please ask your local Jungheinrich dealer for complete terms and conditions.