

# TUSKROBOTS

## TUSK ES-H

RELIABLE, SAFE &  
PRODUCTION-READY



# TUSK ES-H

**Tusk ES-H** is a standalone intelligent pallet AGV designed for rapid deployment and flexible intralogistics automation. With payloads **up to 1,000 kg and speeds up to 1.5 m/s**, it supports efficient ground-level pallet handling with an “invisible” fork arm and lifting height up to 330 mm.

**Dual navigation (SLAM + DM-code)**, 360° laser-based obstacle detection, and high positioning accuracy ( $\pm 20$  mm /  $\pm 2^\circ$ ) enable stable operation in dynamic environments. **VDA 5050-ready integration** and cluster scheduling support scalable fleet operation, while the LFP battery delivers **up to 8 hours runtime with fast 2-hour charging**.

## Multi-dimensional protection

- Safety bumper
- Emergency stop button
- Status indicator lights
- Sound alarm
- Real-time monitoring of AGV operation status

## Visual obstacle avoidance

- Forward - facing stereo camera
- Stereoscopic space protection

## Hybrid navigation

- Hybrid switching between DM Code and SLAM Dual navigation

## Lifting mechanism

- Invisible fork system
- Direct pallet pickup
- Body-backed operation

## 360° safety

- 4 laser configuration
- 360° laser protection



## Lifting mechanism

INVISIBLE FORK ARM  
LIFTING HEIGHT UP TO 330 MM

## Navigation

DUAL (SLAM + DM  
NAVIGATION)

## VDA 5050

SEAMLESS FLEET INTEGRATION

## Max speed

1.5 M/S

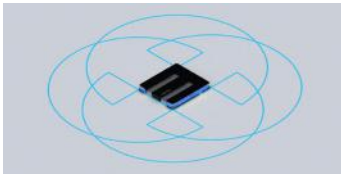
## Rated load

1,000 KG

## Safety

360°, OBSTACLE AVOIDANCE DETECTION

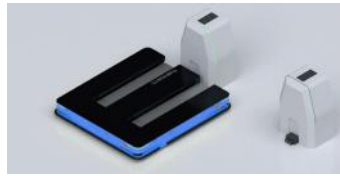




Safety



Ground roller



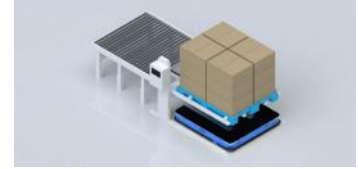
Charging



Dense storage

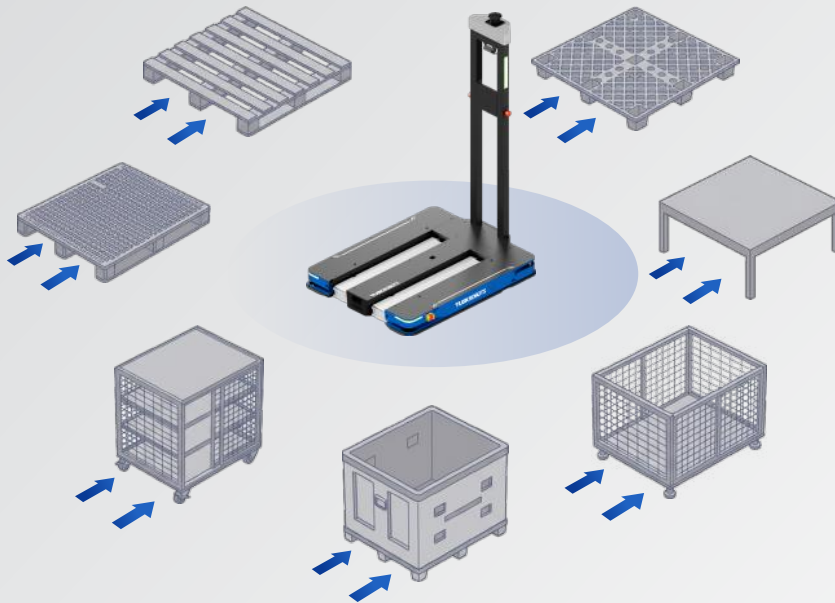


Elevator



Lift conveyor line

### Designed for diverse pallet formats



### Ground Adaptability

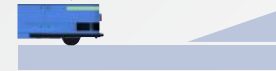
#### SURFACE ROUGHNESS

Variation  $\leq 5\text{mm}$  within  $1\text{m}^2$



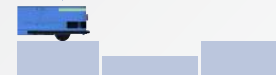
#### SLOPE

$\alpha \leq 4^\circ$



#### GAP

$L \leq 40\text{mm}$



#### STEP

$H \leq 15\text{mm}$  within a range of  $100\text{mm}$  length



### HONORS



red dot

Red Dot Design Award



2023 RBR50 Robotics Innovation Awards



The iF Design Award

# TUSK ES-H

## SPECIFICATION

Type	Straddle low lift
Navigation	Hybrid navigation (switching between DM Code and SLAM Dual Navigation), obstacle avoidance detection
Direction of drive	Forward, backward, on the spot rotation
Minimal turning radius (m)	1.9
Max speed (m/s)	1.5
Load capacity (kg)	1,000
Lift	Electric
Max lift (mm)	330
Dimensions (L, W, H in mm)	1,455x1,060x170
Forks	Welded
Pallet length	$\leq 1,400$
Pallet width (W1 and W2 in mm)	$W1 \leq 160, 600 \leq W2 \leq 900$
Manipulation	From the ground
Batteries	LFP (lithium iron phosphate)
Charging	Automatic - contact
Control	HMI - display, URC (Universal remote control)
Safety scanners	Double Front & Rear laser sensors, 360° Obstacle avoidance



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