
# ORDER PICKER V

## CAPACITY 1200 KG | SERIES 5213

### Safety

The V range truck is designed to guarantee the operator's safety in all conditions while driving, lifting and order picking. Its outstanding visibility through and to either side of the mast offers the highest level of security. The low cab step height increases safety, while the 2 integrated touch sensors on the control panel ensure two handed operation. The LSC monitors driving, lifting and steering movements and reduces their performance automatically, if needed.

### Performance

Efficiency and high performance describe the V range order picker. It is capable of picking at heights up to 12000 mm. Its powerful AC drive units combine optimum performance with low energy consumption. Three different driving and lifting options allow the truck to exactly match the application. The tilting barriers increase productivity - the operator can get closer to the rack to pick loads from the back of the pallet.

### Comfort

Entering the cabin of the V range truck and stepping onto the antivibration floor mat gives the operator the feeling of comfortable working from the first second. The wide variety of storage compartments provided by the attachment bar and options means the truck can be equipped for every kind of order picking application. No matter whether it is lifting or lowering, with or without load, the cabin of the V range truck always stops gently and precisely.

### Reliability

Our expertise in designing and building material handling equipment is the guarantee that the V model is a truck you can rely on. Thanks to easy maintenance, downtime is reduced and throughput is increased. An active cooling system ensures the maximum availability even in extreme conditions.

### Productivity

The unique modular design concept of the V-modular ensures that each truck can be tailored to match the application preci-sely in order to maximize it's productivity at all times. Based on the latest ergonomic standards, the working environment and the controls allow the operator to maximise throughput.

# TECHNICAL DATA

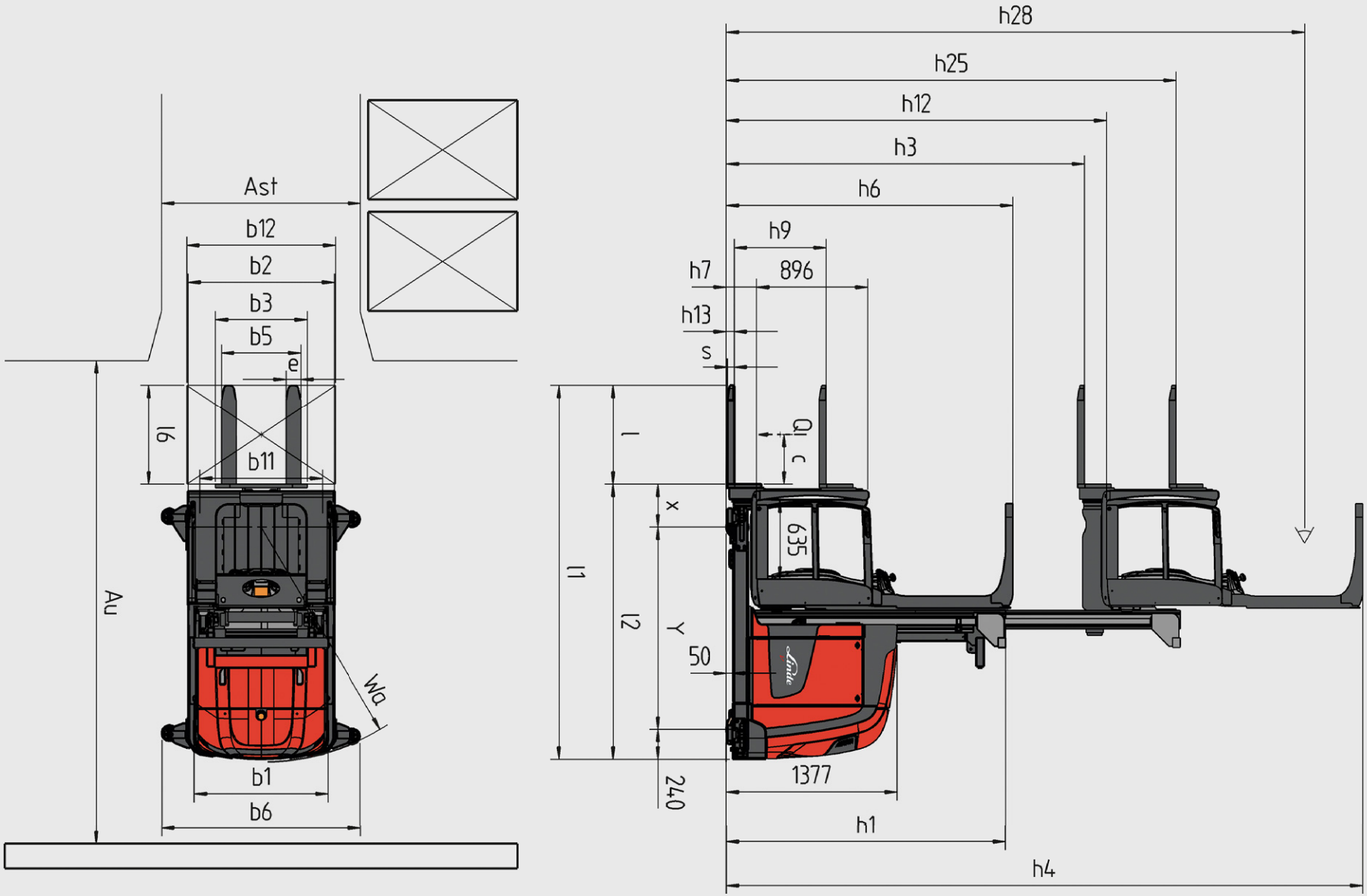
## ACCORDING TO VDI 2198

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Characteristics | 1.1 | Manufacturer | | LINDE | LINDE | LINDE | LINDE |
| | 1.2 | Model designation | | **V 24V Example Standard mast [1]** | **V 24V Example Triplex mast [1]** | **V 48V Example Standard mast [1]** | **V 48V Example Triplex mast [1]** |
| | 1.2a | Series | | 5213-01 | 5213-01 | 5213-01 | 5213-01 |
| | 1.3 | Power unit | | Battery | Battery | Battery | Battery |
| | 1.4 | Operation | | Order Picker | Order Picker | Order Picker | Order Picker |
| | 1.5 | Load capacity | Q (t) | 0.8 | 0.8 | 1.2 | 1.2 |
| | 1.6 | Load centre | c (mm) | 600 | 600 | 400 | 400 |
| | 1.8 | Axle centre to fork face | x (mm) | 345 | 405 | 345 | 405 |
| | 1.9 | Wheelbase | y (mm) | 1394 | 1466 | 1503 | 1664 |
| Weight | 2.1 | Service weight | (kg) | 3185 [2] | 4302 [2] | 4145 [2] | 5498 [2] |
| | 2.2 | Axle load with load, front/rear | (kg) | 1272 / 2713 [2] | 1803 / 3299 [2] | 1707 / 3638 [2] | 2289 / 4409 [2] |
| | 2.3 | Axle load without load, front/rear | (kg) | 1814 / 1371 [2] | 2351 / 1951 [2] | 2302 / 1843 [2] | 2870 / 2628 [2] |
| Wheels and types | 3.1 | Tyres rubber, SE, pneumatic, polyurethane | | Polyurethane | Polyurethane | Polyurethane | Polyurethane |
| | 3.2 | Tyre size, front | | Ø 360 x 130 | Ø 360 x 130 | Ø 360 x 130 | Ø 360 x 130 |
| | 3.3 | Tyre size, rear | | Ø 180 x 156 | Ø 180 x 156 | Ø 180 x 156 | Ø 180 x 156 |
| | 3.5 | Wheels, number front / rear (x = driven) | | 1x / 2 | 1x / 2 | 1x / 2 | 1x / 2 |
| | 3.6 | Track width, front | $b_{10}$ (mm) | 0 | 0 | 0 | 0 |
| | 3.7 | Track width, rear | $b_{11}$ (mm) | 695 | 895 | 995 | 1394 |
| Dimensions | 4.2 | Height of mast, lowered | $h_1$ (mm) | 2900 | 3400 | 3900 | 4500 |
| | 4.3 | Free lift | $h_2$ (mm) | - | 2750 | - | 3850 |
| | 4.4 | Lift | $h_3$ (mm) | 4125 | 7160 | 5725 | 10160 |
| | 4.5 | Height of mast, extended | $h_4$ (mm) | 6415 | 9450 | 8015 | 12450 |
| | 4.7 | Height of overhead guard (cabin) | $h_6$ (mm) | 2290 | 2290 | 2290 | 2290 |
| | 4.8 | Height of seat/stand on platform | $h_7$ (mm) | 240 | 240 | 240 | 240 |
| | 4.11 | Supplementary lift | $h_9$ (mm) | 740 | 740 | 740 | 740 |
| | 4.14 | Platform height, raised | $h_{12}$ (mm) | 4365 | 7400 | 5965 | 10400 |
| | 4.15 | Height, lowered | $h_{13}$ (mm) | 65 | 65 | 65 | 65 |
| | 4.19 | Overall length | $l_1$ (mm) | 3277 | 3536 | 3018 | 3294 |
| | 4.20 | Length to fork face | $l_2$ (mm) | 2077 | 2336 | 2218 | 2494 |
| | 4.21 | Overall width | $b_1$ / $b_2$ (mm) | 880 / 880 | 1080 / 1080 | 1080 / 1180 | 1080 / 1580 |
| | 4.22 | Fork dimensions | s / e / l (mm) | 55 x 120 x 1200 | 55 x 120 x 1200 | 55 x 120 x 800 | 55 x 120 x 800 |
| | 4.23 | Fork carriage to ISO 2328, class / type A, B | | no | no | no | no |
| | 4.24 | Width of fork carriage | $b_3$ (mm) | 660 | 660 | 740 | 740 |
| | 4.25 | Fork spread, min / max | $b_5$ (mm) | 560 / 560 | 560 / 560 | 640 / 640 | 640 / 640 |
| | 4.27 | Width over side guide rollers | $b_6$ (mm) | - | 1275 | 1375 | 1815 |
| | 4.31 | Ground clearance, below mast | $m_1$ (mm) | 50 | 50 | 50 | 50 |
| | 4.32 | Ground clearance, centre of wheelbase | $m_2$ (mm) | 50 | 50 | 50 | 50 |
| | 4.34 | Aisle width with pallet 800 x 1200 along forks | $A_{st}$ (mm) | - | 1320 | 1380 | 1820 |
| | 4.35 | Turning radius | $W_a$ (mm) | 1732 | 2034 | 1873 | 2089 |
| | 4.42 | End aisle width, with / without load | $A_u$ (mm) | 3528 | 3888 | 3866 | 4135 |
| Performance | 5.1 | Travel speed, with / without load | km / h | 9 / 9 | 10 / 10 | 11 / 11 | 13 / 13 |
| | 5.2 | Lifting speed, with / without load | m / s | 0.28 / 0.3 | 0.23 / 0.28 | 0.36 / 0.36 (0.4 / 0.4) [3] | 0.4 / 0.32 |
| | 5.3 | Lowering speed, with / without load | m / s | 0.28 / 0.28 | 0.28 / 0.28 | 0.32 / 0.32 (0.35 / 0.35) [3] | 0.35 / 0.35 |
| | 5.9 | Acceleration time, with / without load | s | 8.0 / 8.0 | 8.0 / 8.0 | 8.0 / 8.0 | 8.0 / 8.0 |
| | 5.10 | Service brake | | Regenerative / Mechanic | Regenerative / Mechanic | Regenerative / Mechanic | Regenerative / Mechanic |
| Drive | 6.1 | Drive motor, 60 minute rating | (kW) | 4.5 | 4.5 | 6.5 | 6.5 |
| | 6.2 | Lift motor, rating at $S_3$ 15 % | (kW) | 7.6 | 7.6 | 11.5 | 13 |
| | 6.4 | Battery voltage / rated capacity (5 h) | (V/Ah) | 24 / 840 | 24 / 1120 | 48 / 620 | 48 / 930 |
| | 6.5 | Battery weight (± 5 %) | (kg) | 687 | 883 | 933 | 1309 |
| Others | 8.1 | Type of drive control | | Microprocessor | Microprocessor | Microprocessor | Microprocessor |
| | 8.4 | Noise level at operator's ear | (dB(A)) | 64 | 64 | 64 | 64 |

[1] Examplary configuration based on a modular trucksystem.
Please contact your local sales department for an individual truck configuration

[2] Figures with battery, see line 6.4 / 6.5.

[3] Figures in parenthesis for optional „Heavy"


Ast
b12
b2
b3
b5
e
l6
b11
Au
Wa
b1
b6
h28
h25
h12
h3
h6
h9
h7
896
h13
s
l
Q
c
x
635
l1
l2
y
50
1377
240
h1
h4

# MAST TABLES

| Telescopic mast with supplementary lift | | | | | | | |
|---|---|---|---|---|---|---|---|
| Height of mast, lowered ($h_1$) | Total lift height from ground $h_{25}$ ($h_3 + h_9 + h_{13}$) | Total lift height $h_{24}$ ($h_3 + h_9$) | Lift height w/o supplementary lift $h_3$ | Supplementary lift $h_9$ | Platform height $h_{12}$ ($h_3 + h_7$) | Picking height $h_{28}$ ($h_{12} + 1600$) | Extended height $h_4$ |
| 2250 | 3630 | 3565 | 2825 | 740 | 3065 | 4665 | 5115 |
| 2450 | 4030 | 3965 | 3225 | 740 | 3465 | 5065 | 5515 |
| 2900 | 4930 | 4865 | 4125 | 740 | 4365 | 5965 | 6415 |
| 3400 | 5930 | 5865 | 5125 | 740 | 5365 | 6965 | 7415 |
| 3900 | 6530 | 6465 | 5725 | 740 | 5965 | 7565 | 8015 |
| 4400 | 7530 | 7465 | 6725 | 740 | 6965 | 8565 | 9015 |
| 4900 | 8530 | 8465 | 7725 | 740 | 7965 | 9565 | 10015 |
| 5400 | 9330 | 9265 | 8525 | 740 | 8765 | 10365 | 10815 |

| Triplex mast with supplementary lift | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Height of mast, lowered ($h_1$) | Total lift height from ground $h_{25}$ ($h_3 + h_9 + h_{13}$) | Total lift height $h_{24}$ ($h_3 + h_9$) | Lift height w/o supplementary lift $h_3$ | Free lift $h_2$ | Supplementary lift $h_9$ | Platform height $h_{12}$ ($h_3 + h_7$) | Picking height $h_{28}$ ($h_{12} + 1600$) | Extended height $h_4$ |
| 2250 | 5215 | 5150 | 4410 | 1600 | 740 | 4650 | 6250 | 6700 |
| 2450 | 5815 | 5750 | 5010 | 1800 | 740 | 5250 | 6850 | 7300 |
| 2900 | 7165 | 7100 | 6360 | 2250 | 740 | 6600 | 8200 | 8650 |
| 3400 | 7965 | 7900 | 7160 | 2750 | 740 | 7400 | 9000 | 9450 |
| 3900 | 9465 | 9400 | 8660 | 3250 | 740 | 8900 | 10500 | 10950 |
| 4500 | 10965 | 10900 | 10160 | 3850 | 740 | 10400 | 12000 | 12450 |

# STANDARD EQUIPMENT / OPTIONAL EQUIPMENT

## STANDARD EQUIPMENT

**Operators compartment:**

- Mast or load side controls
- Suspension mounted cab to absorb shocks and vibration
- Soft rubber mat isolates operator from shocks and vibration
- Storage compartments, pen holders and space for bottles, cans or tools integrated into cab interior
- LCD "comfort" display with keypad log-on, lift height indicator, speedometer, hourmeter, steer wheel position indicator, battery status and service codes
- Very low step height for easy on / off access
- Steering knob

**Throughput:**

- Durable polyurethane wheels
- Regenerative electric braking through the drive motor for optimum use of energy
- Battery discharge indicator with lift cutout

**Safety:**

- Automatic reduction in travel speed with platform raised (LSC 3.0)
- All traction and lift functions interlocked through foot switch and sensors, ensuring two handed operation
- Linde curve control for safe cornering
- Side barriers with gas struts and safety interlocks
- Warning light

## OPTIONAL EQUIPMENT

**Operators compartment:**

- Alternative cabin widths (900 mm – 1800 mm)
- Rearview mirror module (left / right) on load side or mast side including LED working lights
- LED cabin working light with two step illumination
- Fan on overhead guard included in mirror module
- Steering wheel
- Macrolon cover for overhead guard
- Attachment base for writing pads / terminals / other equipment
- Radio preparation 12 V / 50 W with two speakers and antenna
- Linde LFM data management system
- Overhead guard: 2200 mm height for greater comfort

**Throughput:**

- 10 different chassis, 880 mm – 1580 mm to suit every application
- Supplementary lift 750 mm for easy order picking
- Buttons for supplementary lift on load side for easy handling
- Truck prepared for data terminal, printer, scanner installation
- Semi-automatic navigation system
- Different drive and lift motors available

**Safety:**

- Alternative speed reduction and end of aisle stop interlocks
- Aisle Safety Assist for individual safety interlocks for each aisle
- Lift and traction cut outs
- Touchless anti-collision sensor for lifting
- LSC for speed reduction with weight and load dependent speed profiles for lifting and driving; weight measuring sensor
- Load wheel brakes for increased safety in an emergency

**Mast / Forks:**

- Different fork lengths
- Carriage for adjustable forks
- Walk on platform
- Pallet clamp
- Mast soft end stops for lifting / lowering

**Environment:**

- Mechanical aisle guidance
- Inductive aisle guidance
- Cold store version
- Antistatic guide rollers and wheels

# FEATURES

## Modular concept

→ Unique modular design allows the perfect specification for each individual application
→ Combination of different lift motors, drive motors, chassis, masts, batteries, cabins, etc. to suit every application
→ Two voltage variants provide the perfect solution to customers needs: 48 V for high performance in medium and heavy duty applications and 24 V variant for low to medium duty applications

## Operator's compartment

→ Specially designed side barriers for optimal order picking
→ Deadman pedal hidden under suspension floor mat to avoid trip hazzard
→ Platform is suspension mounted and has a floor mat designed to absorb shocks and vibration
→ Very spacious cabin due to integrated control panels for maximum freedom of movement

## Variety of applications

→ Forks mounted on the operator's plat form for working with walk-out pallets. Operator is protected by a cage, the pallet is secured by a clamp
→ Platform welded onto the operator's compartment for picking bulky goods
→ Suppl. lift on operator's platform. Pallet can be raised to most convenient working height for picking

## Control concept

→ Controls and integrated display panel are in the operator's field of view
→ Standard LCD display gives the driver all necessary information
→ Simple, ergonomic controls allow precise operation reducing driver fatigue and increasing throughput
→ Simultaneous driving/lifting/lowering
→ Safe two-handed operation

## Steering

→ Electric steering with defined centre position
→ Esay and precise manoeuvring by steering knob (optional steering wheel available)
→ Steer angle monitoring ensures safe high-performance driving characteristics

## High performance with intelligent control systems

→ Linde System Control (LSC) gives stepless automatic adjustment of speed depending on steering angle, lift height and load weight (optional)
→ Safe cornering with curve speed control as standard
→ Aisle safety assist tailored for each aisle in your warehouse, including lift or traction interlocks, speed reduction etc.

## Safety

→ Automatic speed reduction when turning
→ All traction and lift functions interlocked through deadman's pedal and 2 handed operation
→ Emergency lowering valve under rear cover easily accessible even in the aisle

## Drive and lift

→ The powerful and energy-efficient drive and lift units combine optimum performance with low energy consumption and long life
→ Latest MOSFET technology
→ Rail guidance rollers or inductive wire guidance technology can be fitted to the truck for VNA applications

Presented by:



Linde Material Handling

**Linde Material Handling GmbH**
Carl-von-Linde-Platz | 63741 Aschaffenburg | Germany
Phone + 49 6021 99 0 | Fax + 49 6021 99 1570
www.linde-mh.com | info@linde-mh.com

Printed in Germany 053.e.1.0319.IndC.Ki