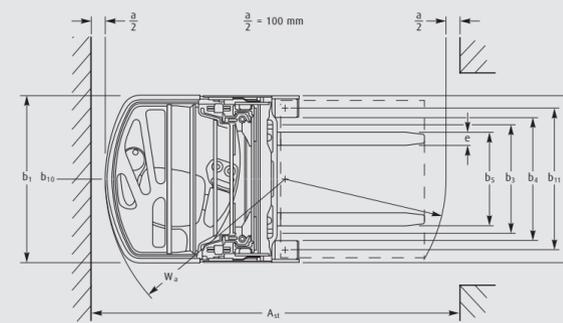
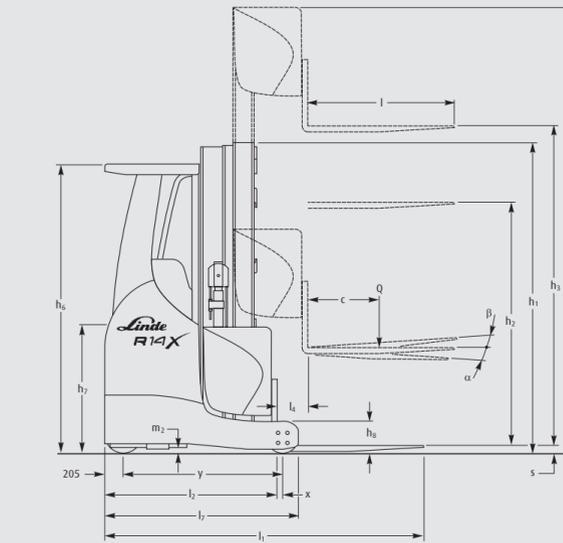


## Technical data

|   |   | LINDE                               | LINDE                       | LINDE                       | LINDE                       |                             |
|---|---|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Characteristics                                     | 1.1 Manufacturer  | LINDE                               | LINDE                       | LINDE                       | LINDE                       |                             |
|   | 1.2 Model designation   | <b>R 14 X</b>                       | <b>R 16 X</b>               | <b>R 17 X</b>               | <b>R 17 X HD</b>            |                             |
|   | 1.3 Power unit: battery, diesel, petrol, LP gas, mains power              | Battery                             | Battery                     | Battery                     | Battery                     |                             |
|   | 1.4 Operation: manual, pedestrian, stand-on, seated, order picker         | Seated                              | Seated                      | Seated                      | Seated                      |                             |
|   | 1.5 Load capacity   | Q (kg)                              | 1.400 <sup>1)</sup>         | 1.600 <sup>1)</sup>         | 1.700 <sup>1)</sup>         | 1.700 <sup>1)</sup>         |
|   | 1.6 Load centre   | c (mm)                              | 600/500                     | 600/500                     | 600/500                     | 600/500                     |
| Weights   | 1.8 Axle centre to fork face  | x (mm)                              | 41                          | 41                          | 41                          |                             |
|   | 1.9 Wheelbase   | y (mm)                              | 1130                        | 1130                        | 1346                        | 1346                        |
|   | 2.1 Service weight  | kg                                  | 3620                        | 3810                        | 3746                        | 4330                        |
|   | 2.3 Axle load without load, front (drive)/rear (load)                     | kg                                  | 1960/1660 <sup>2)</sup>     | 1980/1830 <sup>2)</sup>     | 1817/1929 <sup>2)</sup>     | 2100/2230 <sup>2)</sup>     |
|   | 2.4 Axle load, fork outreached with load, front (drive)/rear (load)       | kg                                  | 910/4110 <sup>2)</sup>      | 860/4550 <sup>2)</sup>      | 896/4550 <sup>2)</sup>      | 1180/4850 <sup>2)</sup>     |
|   | 2.5 Axle load, fork retracted with load, front (drive)/rear (load)        | kg                                  | 1150/3870 <sup>2)</sup>     | 1150/4260 <sup>2)</sup>     | 1340/4106 <sup>2)</sup>     | 1394/4636 <sup>2)</sup>     |
| Wheels & Tyres                                      | 3.1 Tyres, front (drive)/rear (load) C = cushion rubber, P = polyurethane |                                     | P/P                         | P/P                         | P/P                         |                             |
|   | 3.2 Tyre size, front (drive) wheel  | mm                                  | Ø 343 x 135                 |
|   | 3.3 Tyre size, rear (load) wheel  | mm                                  | Ø 230 x 140                 |
|   | 3.5 Wheels, number front (drive)/rear (load) (x = driven)                 |                                     | 1x/2                        | 1x/2                        | 1x/2                        | 1x/2                        |
|   | 3.6 Track width, front (drive)  | b <sub>10</sub> (mm)                | 0                           | 0                           | 0                           | 0                           |
|   | 3.7 Track width, rear (load)  | b <sub>11</sub> (mm)                | 1072                        | 1072                        | 1072                        | 1072                        |
| Dimensions  | 4.1 Mast/fork carriage tilt, forward/backward                             | α/β (°)                             | 0/2.5 (2/2.5) <sup>3)</sup> | 0/2.5 (2/2.5) <sup>3)</sup> | 0/2.5 (2/2.5) <sup>3)</sup> | 0/2.5 (2/2.5) <sup>3)</sup> |
|   | 4.2 Height of mast, lowered   | h <sub>1</sub> (mm)                 | 2455 <sup>4)</sup>          | 2455 <sup>4)</sup>          | 2955 <sup>4)</sup>          | 2955 <sup>4)</sup>          |
|   | 4.3 Free lift   | h <sub>2</sub> (mm)                 | 1541 <sup>4)</sup>          | 1541 <sup>4)</sup>          | 2041 <sup>4)</sup>          | 2041 <sup>4)</sup>          |
|   | 4.4 Lift  | h <sub>3</sub> (mm)                 | 4655 <sup>4)</sup>          | 5155 <sup>4)</sup>          | 6355 <sup>4)</sup>          | 6955 <sup>4)</sup>          |
|   | 4.5 Height of mast, extended  | h <sub>4</sub> (mm)                 | 5614 <sup>4)</sup>          | 6114 <sup>4)</sup>          | 7314 <sup>4)</sup>          | 7914 <sup>4)</sup>          |
|   | 4.7 Height of overhead guard (cab)  | h <sub>6</sub> (mm)                 | 2190 (2365) <sup>5)</sup>   | 2355 (2530) <sup>5)</sup>   | 2190 (2365) <sup>5)</sup>   | 2355 (2530) <sup>5)</sup>   |
|   | 4.8 Height of seat, minimum/maximum                                       | h <sub>7</sub> (mm)                 | 970/1130                    | 1135/1295                   | 970/1130                    | 1135/1295                   |
|   | 4.10 Height of reach legs   | h <sub>8</sub> (mm)                 | 245                         | 245                         | 245                         | 245                         |
|   | 4.19 Overall length   | l <sub>1</sub> (mm)                 | 2444                        | 2444                        | 2660                        | 2660                        |
|   | 4.20 Length to fork face  | l <sub>2</sub> (mm)                 | 1294                        | 1294                        | 1510                        | 1510                        |
|   | 4.21 Overall width  | b <sub>1</sub> /b <sub>2</sub> (mm) | 1270/1270                   | 1270/1270                   | 1270/1270                   | 1270/1270                   |
|   | 4.22 Fork dimensions  | s/e/l (mm)                          | 40 x 80 x 1150              | 45 x 100 x 1150             | 45 x 100 x 1150             | 45 x 100 x 1150             |
|   | 4.23 Fork carriage to DIN 15173, class/form A, B                          |                                     | 2A                          | 2A                          | 2A                          | 2A                          |
|   | 4.24 Width of fork carriage   | b <sub>3</sub> (mm)                 | 820                         | 820                         | 820                         | 820                         |
|   | 4.25 Fork spread, minimum/maximum   | b <sub>5</sub> (mm)                 | 316/710                     | 316/710                     | 316/710                     | 316/710                     |
|   | 4.26 Width between reach legs   | b <sub>4</sub> (mm)                 | 910                         | 910                         | 910                         | 910                         |
|   | 4.28 Reach travel   | l <sub>4</sub> (mm)                 | 170                         | 170                         | 170                         | 170                         |
|   | 4.31 Ground clearance, mast   | m <sub>1</sub> (mm)                 | -                           | -                           | -                           | -                           |
|   | 4.32 Ground clearance, centre of wheelbase                                | m <sub>2</sub> (mm)                 | 70                          | 70                          | 70                          | 70                          |
| 4.33 Aisle width, pallet 1 000 x 1 200 across forks | A <sub>st</sub> (mm)  | 2666                                | 2666                        | 2882                        | 2882                        |                             |
| 4.34 Aisle width, pallet 800 x 1 200 along forks    | A <sub>sl</sub> (mm)  | 2761                                | 2761                        | 2977                        | 2977                        |                             |
| 4.35 Turning radius                                 | W <sub>3</sub> (mm)   | 1335                                | 1335                        | 1551                        | 1551                        |                             |
| 4.37 Length of chassis                              | l <sub>7</sub> (mm)   | 1451                                | 1451                        | 1667                        | 1667                        |                             |
| Performance   | 5.1 Travel speed, with/without load                                       | km/h                                | 14/14 <sup>2)</sup> 4)      | 14/14 <sup>2)</sup> 4)      | 14/14 <sup>2)</sup> 4)      | 14/14 <sup>2)</sup> 4)      |
|   | 5.2 Lifting speed, with/without load                                      | m/s                                 | 0.44/0.7 <sup>2)</sup> 4)   | 0.41/0.7 <sup>2)</sup> 4)   | 0.4/0.7 <sup>2)</sup> 4)    | 0.4/0.7 <sup>2)</sup> 4)    |
|   | 5.3 Lowering speed, with/without load                                     | m/s                                 | 0.55/0.45 <sup>2)</sup>     | 0.55/0.45 <sup>2)</sup>     | 0.55/0.45 <sup>2)</sup>     | 0.55/0.45 <sup>2)</sup>     |
|   | 5.4 Reach speed, with/without load  | m/s                                 | 0.10/0.105 <sup>2)</sup>    | 0.10/0.105 <sup>2)</sup>    | 0.10/0.105 <sup>2)</sup>    | 0.10/0.105 <sup>2)</sup>    |
|   | 5.7 Climbing ability, with/without load, 30 minute rating                 | %                                   | 3.9/7.1                     | 3.9/7.1                     | 3.9/7.1                     | 3.9/7.1                     |
|   | 5.8 Maximum climbing ability, with/without load, 5 minute rating          | %                                   | 10/10                       | 10/10                       | 10/10                       | 10/10                       |
| 5.9 Acceleration time, with/without load            | s   | 5.8/5 <sup>4)</sup>                 | 5.8/5 <sup>4)</sup>         | 5.8/5 <sup>4)</sup>         | 5.8/5 <sup>4)</sup>         |                             |
| 5.10 Service brake                                  |   | Hydraulic/electric                  | Hydraulic/electric          | Hydraulic/electric          | Hydraulic/electric          |                             |
| Drive   | 6.1 Drive motor, 60 minute rating   | kW                                  | 6.5                         | 6.5                         | 6.5                         | 6.5                         |
|   | 6.2 Lift motor, 15% rating  | kW                                  | 14                          | 14                          | 14                          | 14                          |
|   | 6.3 Battery to DIN/IEC  |                                     | 43531A/254-2                | 43531A/254-2                | 43531A/254-2                | 43531A/254-2                |
|   | 6.4 Battery voltage/rated capacity (5h)                                   | V/Ah                                | 48/660                      | 48/660                      | 48/640                      | 48/920                      |
|   | 6.5 Battery weight (±5%)  | kg                                  | 720                         | 1013                        | 946                         | 1530                        |
|   | 6.6 Power consumption to VDI cycle  | kWh/h                               | ?)                          | ?)                          | ?)                          | ?)                          |
| Other   | 8.1 Type of drive control   |                                     | Electronic/stepless         | Electronic/stepless         | Electronic/stepless         | Electronic/stepless         |
|   | 8.2 Working pressure for attachments                                      | bar                                 | 200                         | 200                         | 200                         | 200                         |
|   | 8.3 Oil flow for attachments  | l/min                               | 6.5                         | 6.5                         | 6.5                         | 6.5                         |
|   | 8.4 Noise level at operator's ear   | dB (A)                              | ?)                          | ?)                          | ?)                          | ?)                          |

1) Traction, lift, lower and reach speeds and weights may vary with alternative lift heights  
 2) Figures in brackets are with manually operated hydraulic fork tilt  
 3) For other heights, see table  
 4) Figure in brackets is for optional overhead guard with increased headroom

5) Figure in brackets is for intrusive stacking  
 6) Reduced speed and acceleration on request  
 7) Refer to manufacturer for figures



| Triplex mast             |  | h <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> | h <sub>1</sub> | h <sub>2</sub> |
|--------------------------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Lift                     |  | 4655           | 5155           | 5755           | 6355           | 6655           | 6955           | 7255           | 7555           |                |
| Height of mast, lowered  |  | 2455           | 2455           | 2955           | 2955           | 2955           | 2955           | 3455           | 3455           |                |
| Height of mast, extended |  | 5614           | 6114           | 6714           | 7314           | 7614           | 7914           | 8214           | 8514           |                |
| Free lift                |  | 1541           | 1541           | 2041           | 2041           | 2041           | 2041           | 2541           | 2541           |                |
| Lift                     |  | 7955           | 8255           | 8555           | 8955           | 9155           | 9455           | 9755           | 10155          |                |
| Height of mast, lowered  |  | 3455           | 3455           | 3955           | 3955           | 3955           | 3955           | 3955           | 4455           |                |
| Height of mast, extended |  | 8914           | 9214           | 9514           | 9914           | 10114          | 10414          | 10714          | 11114          |                |
| Free lift                |  | 2541           | 2541           | 3041           | 3041           | 3041           | 3041           | 3041           | 3541           |                |
| Lift                     |  | 10655          | 10755          | 11155          | 11455          | -              | -              | -              | -              |                |
| Height of mast, lowered  |  | 4455           | 4455           | 4930           | 4930           | -              | -              | -              | -              |                |
| Height of mast, extended |  | 11614          | 11714          | 12114          | 12414          | -              | -              | -              | -              |                |
| Free lift                |  | 3541           | 3541           | 4016           | 4016           | -              | -              | -              | -              |                |

Alternative lift heights on request. Lift height = h<sub>3</sub> + s  
 Maximum lifts - R 14 X : 9455 mm  
 R 16 X : 9955 mm  
 R 17 X / R 17 X HD : 11455 mm



## Standard and optional equipment

### Standard equipment

#### General

- Three-wheel configuration
- Overall width (reach legs) 1270 mm
- Linde Load Control for lift/lower, reach, tilt and sideshift
- Linde twin accelerator pedals
- Full suspension fabric seat with electric lumbar support and adjustable armrests
- Comprehensive head-up digital instrument display
- 6.5 kW maintenance-free AC drive motor
- 14 kW maintenance-free AC lift motor
- Polyurethane drive and load wheel tyres
- Self-adjusting service brakes
- Linde proportional 180° electric steering
- Panoramic clearview triplex fixed mast lift 4655 mm (R 14 X), 5155 mm (R 16 X), 6355 mm (R 17 X), 6955 mm (R 17 X HD)
- Integral sideshift and automatic fork tilt
- Fork length 1150 mm
- Lift height indicator
- Soft stop lowering
- Standard colour scheme vermilion and charcoal grey

#### Batteries and chargers

- 48 V, 480 Ah to 920 Ah depending on model and application
- Wide selection of chargers available to suit application

### Optional equipment

- Panoramic fixed mast lifts to 9455 mm (R 14 X), 9955 mm (R 16 X), 11455 mm (R 17 X, R 17 X HD)
- Single accelerator pedal, automotive layout
- Alternative fork lengths
- Fork extensions
- Load backrest
- Single axis joysticks for lift, reach, tilt and functions
- Audible traction alarm
- 360° steering (single accelerator pedal only)
- Seat heater
- PVC seat material
- Seat back extension
- Cold store protection to minus 30°C
- Variable electronic drive unit brake

#### Electronics

- Linde Digital Control system (LDC) incorporating CAN bus technology

#### Safety

- Monitoring system stops truck in the event of traction, steering or lift failure
- Dual channel fail-to-safe circuitry
- Emergency circuit isolator
- Three independent braking systems
- All-wheel braking
- Seat-actuated traction interlock
- Electric horn
- Automatic slowdown at maximum lift
- Reach travel soft stop
- Protective glass screen between operator and mast
- Battery locking interlock
- Electrical and hydraulic overload protection
- Overhead guard
- Automatic creep speed above 8500 mm lift

#### Mast

- Torsion-resistant fixed triplex panoramic mast
- Automatic fork tilt
- Integral sideshift
- High residual capacities

#### Cold store cab (R 17 X HD only)

- Manual fork tilt
- Automatic fork leveling (manual tilt only)
- Automatic sideshift centring
- Working lamps/beacons
- Additional hydraulic circuit
- Mesh or polycarbonate protection on overhead guard
- Height pre-selector
- PIN access
- LFM
- CCTV
- Seat interlock alarm
- Audible traction alarm
- Increased height overhead guard (plus 175 mm)
- Alternative colour schemes

Other options available on request



## Electric Reach Trucks Capacity 1400 kg – 1700 kg R 14 X, R 16 X, R 17 X

SERIES 116-02

Linde Material Handling

### Safety

The revolutionary Linde X range of reach trucks sets new industry standards for comfort and performance combined with outstanding safety in narrow aisle storage and retrieval applications.

### Performance

The Linde drive and lift system employing advanced control technology translates the powerful output of the AC motors into seamless productivity. A comprehensive selection of DIN batteries ensures each truck is precisely matched to the demands of individual applications.

### Comfort

A perfect interface between operator and truck is assured with the Linde X range concept, which has doubled the space in the cab. The comfort-class seat with lumbar support, incorporates the compact steering wheel and all hydraulic controls integrated into adjustable armrests. Unrestricted comfort and a truly intuitive control layout provides the perfect working environment for optimum performance.

## Features

#### Superb working environment

- Linde Load Control: precise, effortless fingertip control of all mast movements
- Ergonomic full suspension, comfort-class seat fully adjustable to the operator's personal preferences including two adjustable armrests
- The compact electric steering wheel is integrated in the left armrest

#### Stability

- Chassis designed and built for maximum strength and durability
- Heavy-duty materials provide low centre of gravity for stability and high residual capacities

#### Manoeuvrability

- A short wheelbase, compact chassis dimensions and smooth electric power steering ensure easy and efficient manoeuvring

#### Precision

- Assured manoeuvring with Linde twin accelerator pedals
- Precision load handling with Linde Load Control
- Responsive, progressive and adjustable electric steering with essential 'road feel'
- Digital head-up instrument display for instant read out of truck status
- Excellent visibility of load and surrounding environment

#### Unique ultra-wide mast design

- Panoramic view of the load and storage zones
- The mast is fixed to the chassis while a traversing head provides the reach movement.
- Automatic tilt and integrated sideshift are standard



#### Linde twin accelerator pedals

- Effortless forward/reverse selection places minimal demands on operator
- Operator is able to maintain high efficiency and productivity levels

#### Batteries

- Capacities to suit every type of application: 480 Ah to 920 Ah
- Quick and easy battery change

#### Servicing

- Maintenance-free AC traction and lift motors
- Configurable Linde Digital Control system
- Incorporates diagnostic technology
- Easy service access
- Up to 1000 operating hours uptime between services

### Reliability

The Linde X range is constructed for consistent reliability in demanding applications. Its compact, robot-welded chassis ensures maximum structural integrity and durability. The rugged construction and components provide a low centre of gravity for excellent stability and high residual capacities.

### Productivity

Efficiency at work, efficiency in servicing. With uptime ratios of 1000 hours between services and a computerised diagnostic system, maintenance intervals are minimal and operating costs are reduced. All the truck's performance parameters can easily be configured to match the requirements of the customer's application.

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