

New reach truck XR⁰⁹





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Main topics

- Production and design at Luzzara plant
- Production shift from Reutlingen to Luzzara plants
 - Technical updates
 - SOP wk 23/2009
 - Improvement of the order process





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Design

- Chassis dimensions and design unchanged
- New colour → New image
- The prevalence of the yellow colour, highlight the truck design. Now it is more visible
- XR⁰⁹
 - Trucks name is unchanged to emphasize the continuity with a reliable product
 - The apex 09 tells the start of production year for this lift truck at Luzzara

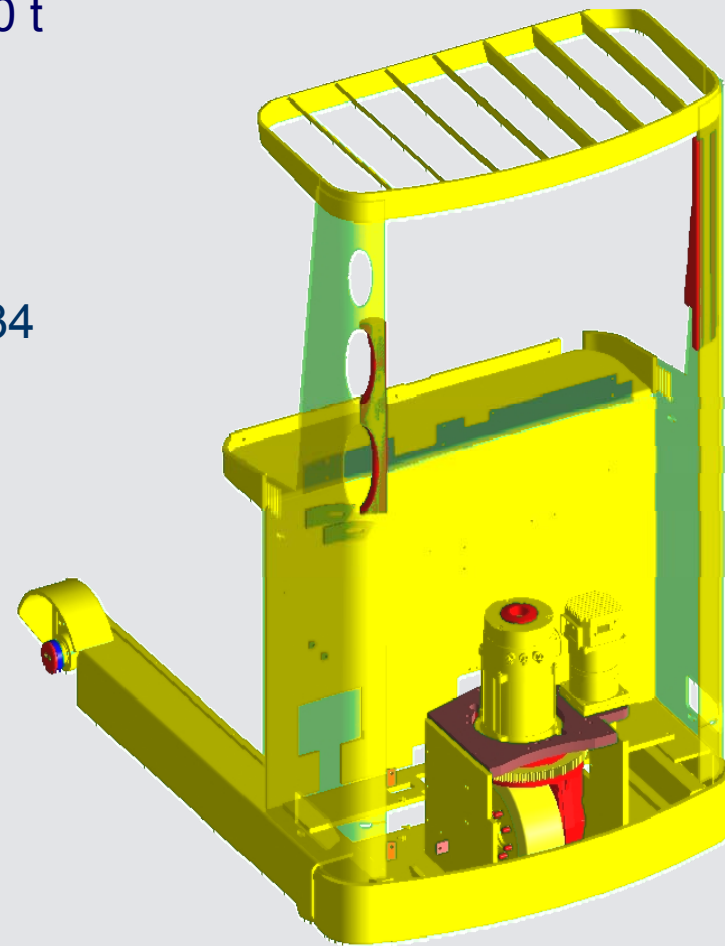


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Chassis, wheels

- Nominal capacities: 1,2 t – 1,4 t – 1,6 t – 2,0 t
- The 2,5 t version is no more available
- 3 load point chassis layout
- One single basement $b_1=1250$ mm with $b_4=914$ mm
- Working aisle with pallet 800x1200 mm (4.34 VDI 2198):
 - Ast from 2742 mm (XR12 – 323) up to 2897 mm (XR20 - 325)
- Polyurethane traction wheel:
343 x 136 mm
- Polyurethane load wheels:
310 x 102 mm



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Masts, forks

- Available masts ($h_3 - h_1 - h_4 - h_2$):

• 5000 - 2200 - 5630 - 1570 mm	Solo per XR ⁰⁹ 12, XR ⁰⁹ 14, XR ⁰⁹ 16
• 5750 - 2450 - 6380 - 1820 mm	Solo per XR ⁰⁹ 12, XR ⁰⁹ 14, XR ⁰⁹ 16
• 6500 - 2700 - 7130 - 2070 mm	Solo per XR ⁰⁹ 12, XR ⁰⁹ 14, XR ⁰⁹ 16
• 7100 - 2900 - 7730 - 2270 mm	Solo per XR ⁰⁹ 14, XR ⁰⁹ 16
• 7825 - 3200 - 8455 - 2570 mm	Solo per XR ⁰⁹ 14, XR ⁰⁹ 16, XR ⁰⁹ 20
• 8375 - 3450 - 9205 - 2820 mm	Solo per XR ⁰⁹ 14, XR ⁰⁹ 16, XR ⁰⁹ 20
• 8825 - 3600 - 9455 - 2970 mm	Solo per XR ⁰⁹ 14, XR ⁰⁹ 16, XR ⁰⁹ 20
• 9625 - 3900 - 10255 - 3270 mm	Solo per XR ⁰⁹ 14, XR ⁰⁹ 16, XR ⁰⁹ 20
• 4825 - 2200 - 5455 - 1570 mm	Solo per XR ⁰⁹ 20
• 5575 - 2450 - 6205 - 1820 mm	Solo per XR ⁰⁹ 20
• 6625 - 2800 - 7255 - 2170 mm	Solo per XR ⁰⁹ 20
• 9225 - 3900 - 9855 - 3270 mm - HD	Solo per XR ⁰⁹ 20
• 10025 - 4300 - 10655 - 3670 mm – HD	Solo per XR ⁰⁹ 20
• 10625 - 4500 - 11255 - 3870 mm – HD	Solo per XR ⁰⁹ 20
• 11525 - 4900 - 12155 - 4270 mm – HD	Solo per XR ⁰⁹ 20

- Lifting $h_3 = 5000 - 5750 - 6500 - 7100$ mm are available also with tilting mast (same residual capacities)
- Mast not available anymore in the new Price list can be available via RMS/UPA

NeW



Masts, forks

NeW

- Tilting mast:
 - $-1^\circ / +3^\circ$ with $h_3 \leq 5750$ mm
 - $-0,5^\circ / +2^\circ$ with $h_3 \geq 5900$ mm
 - Better visibility (less pipes along the mast)
 - Better drivability in tight spaces (pallet easily goes out from racks with mast tilt)
 - More competitive positioning
 - Integral sideshift is option
- Tilting fork:
 - $-2^\circ / +4^\circ$
 - Better truck stability
 - Better precision during pallet pick up / deposit
 - Higher price
 - Integral sideshift is mandatory
- Integral side shift ± 100 mm (option with tilting mast)
- FEM II B forks from 800 mm up to 1600 mm

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Drive place 1/6

- Easy access to drive cab thanks to intermediate step
- Big handle to help operator entering / exiting from lift truck
- High drive position vs. many competitors → Better and safer drive
- Excellent visibility through overhead guard

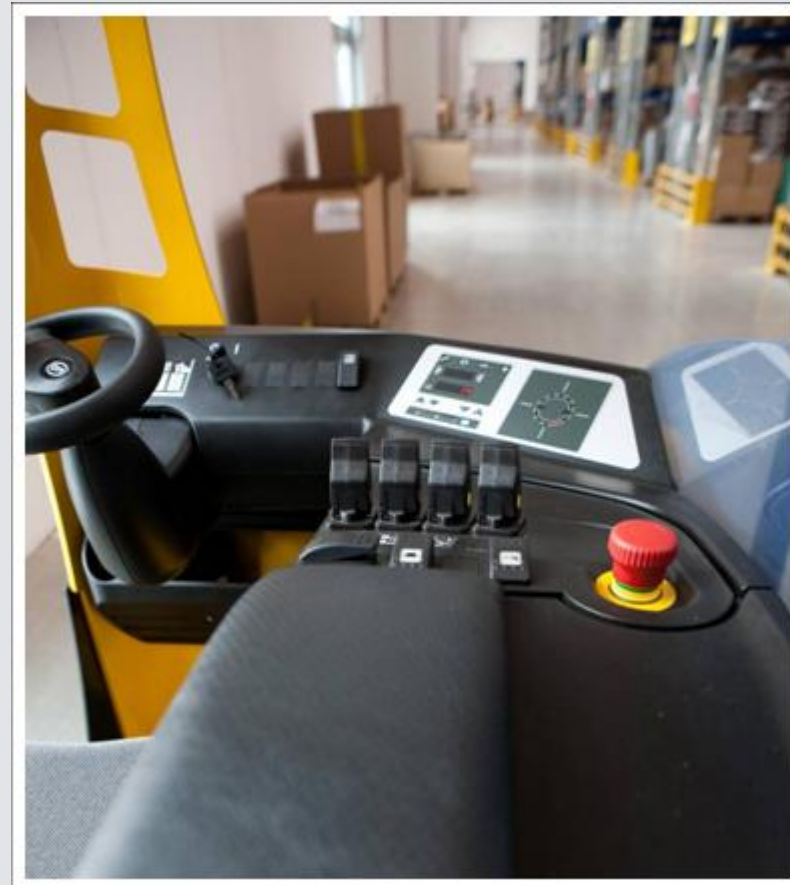


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Drive place 2/6

- Drive place with clear and intuitive controls
- Armrest covered with soft material
- Internal part of drive place covered with soft material
- Amortized seat with backrest wrap and 3 level of adjustment (weight, distance from steering wheel, backrest tilt)
- Seat available in following materials:
 - fabric
 - Imitation leather (mandatory in caso of cold store version without cab)
- The electric footplate adjustment is no longer available



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Drive place 3/6

- Electric steering available with 180° or 360° (standard) at same price
- Steering column has adjustable tilting



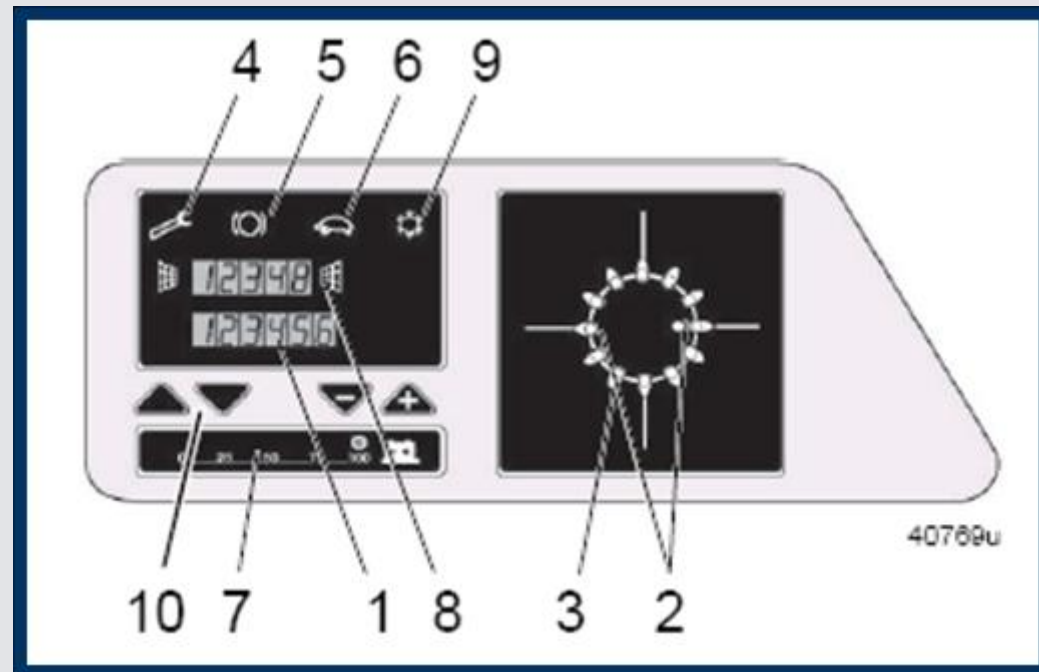
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Drive place 4/6

- Display with clear and intuitive information

1. Display hour meter and error code
2. Travel direction
3. Steer angle
4. Maintenance interval advise / minor fault
5. Parking brake engaged
6. Creep speed profile selected
7. Battery charge indicator
8. Lift height indicator (option)
9. Heater on (option)
10. Arrows for menu selection (service diagnosis)



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Drive place 5/6

- Hydraulic movements controlled via micro levers
- Joystick available via RMS/UPA (soon it will be available from price list) **New**
- Proportional control for all hydraulic movements
- All 4 movements can be simultaneous



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Drive place 6/6

- 4 speed profiles + creep speed selected at operator level

	Travel program 1	Travel program 2	Travel program 3	Travel program 4	Travel program selection
Selection of parameters:	Normal travel 1 (FP1)	1	1	1	1
Max. speed	DWS 12.0 [km/h] LS 12.0 [km/h]	12.0 [km/h] 12.0 [km/h]	9.0 [km/h] 9.0 [km/h]	6.0 [km/h] 6.0 [km/h]	3.0 [km/h] 3.0 [km/h]
Acceleration	DWS 90 [%] LS 90 [%]	100 [%] 100 [%]	90 [%] 90 [%]	90 [%] 90 [%]	50 [%] 50 [%]
Deceleration	DWS 80 [%] LS 80 [%]	80 [%] 80 [%]	80 [%] 80 [%]	80 [%] 80 [%]	40 [%] 40 [%]
Reversing deceleration	DWS 80 [%] LS 80 [%]	80 [%] 80 [%]	80 [%] 80 [%]	80 [%] 80 [%]	50 [%] 50 [%]
Brake pedal deceleration	DWS/LS 80 [%]	100 [%] 100 [%]	80 [%] 80 [%]	80 [%] 80 [%]	60 [%] 60 [%]

Buttons: Download, [], [], [], [], Quit

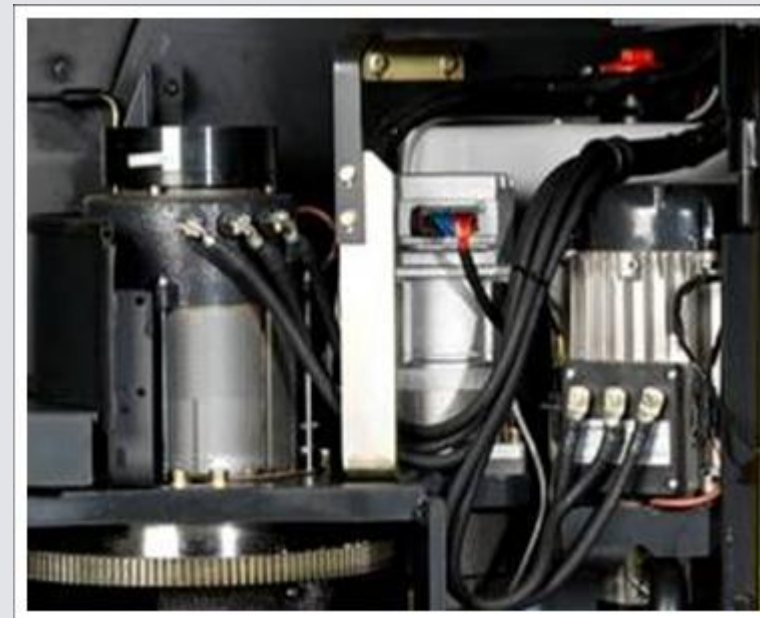
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Motors and performances

- 6 kW AC traction motor
 - Traction speed (loaded/unloaded): 12 km/h
- 11,5 kW AC lift motor
 - Lifting speed (loaded/unloaded): 0,38/0,60 m/s (XR⁰⁹14)
 - Lowering speed (loaded/unloaded): 0,52/0,46 m/s (XR⁰⁹14)
 - Pump with internal gear with reduced noise level
- 500 W AC Steering motor with permanent magnets
- Easy access to motor compartment

NEW

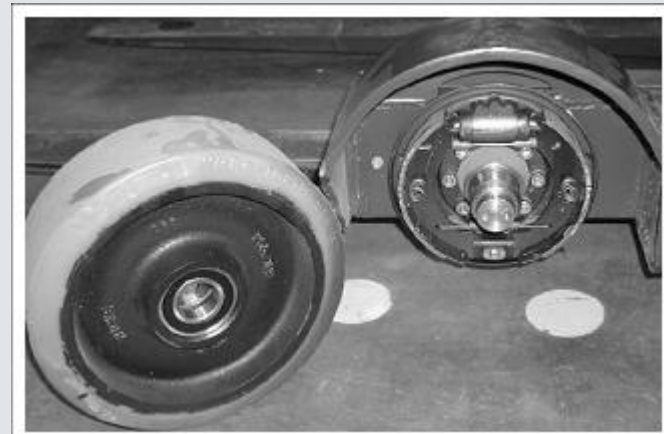


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Braking

- Different braking systems:
 - Electromagnetic parking/emergency brake connected to traction motor. It closes in case of:
 - Key switch off
 - Specific console button has been pushed
 - Emergency red button has been pushed
 - Motor brake at accelerator pedal release. It is an energy recover braking
 - Hydraulic pedal brake. It acts on the load wheels. It is a backup brake for the motor brake.



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Electronics

- The lift truck is fitted with a controller for each motor
- Wiring connections between the different electronic components (Motors, controllers, display, etc) are in CAN BUS mode



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Battery and chargers

- 3 battery cases are available:
 - Case 323 (battery dimension 1223x283x784 mm)
 - Case 324 (battery dimension 1223x355x784 mm)
 - Case 325 (battery dimension 1223x427x784 mm)

BATTERY COMPARTMENT AND MAST MATCHES			
MAST	XR ⁰⁹ 12	XR ⁰⁹ 14, XR ⁰⁹ 16	XR ⁰⁹ 20
h3= 5000	323, 324	323, 324, 325	
h3= 5750	323, 324	323, 324, 325	
h3= 6500	323, 324	323, 324, 325	
h3= 7100		323, 324, 325	
h3= 7825		324, 325	325
h3= 8375		324, 325	325
h3= 8825		324, 325	325
h3= 9625		324, 325	325
h3= 4825			324, 325
h3= 5575			324, 325
h3= 6625			324, 325
h3= 9225			325
h3= 10025			325
h3= 10625			325
h3= 11525			325

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Battery and chargers

- Capacities available (case 323):
 - 48V / 375 Ah (replaces 360 Ah)
 - 48V / 420 Ah
 - 48V / 465 Ah (replaces 480 Ah)
- Capacities available (case 324):
 - 48V / 500 Ah (replaces 480 Ah)
 - 48V / 560 Ah
 - 48V / 620 Ah (replaces 640 Ah)
- Capacities available (case 325):
 - 48V / 625 Ah (replaces 600 Ah)
 - 48V / 700 Ah
 - 48V / 775 Ah (replaces 800 Ah)

Capacities updated!

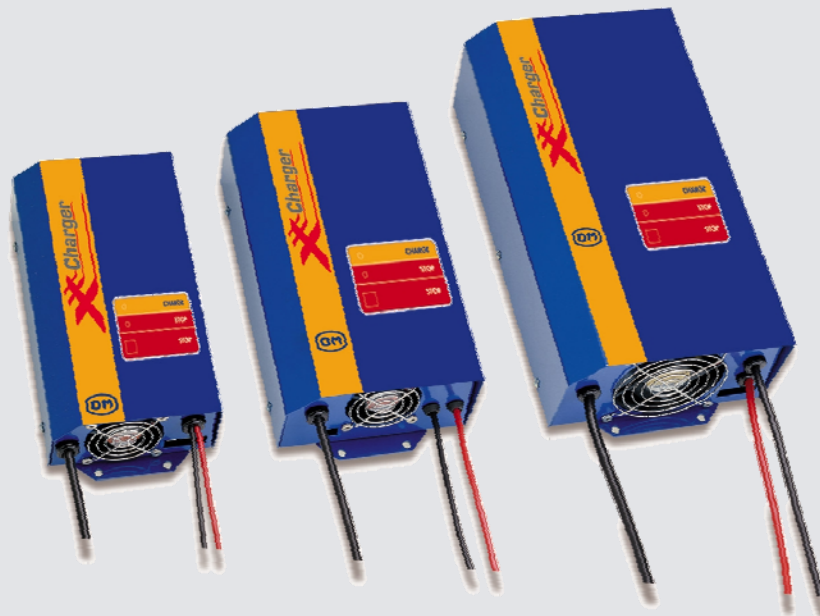


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Battery and chargers

- Available new XCharger range
 - Traditional (already in price list)
 - High frequency (available soon)





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Maintenance

- Maintenance intervals every 6 months or every 1.000 working hours*
- Set up and trouble shooting via XConsole
- Easy access to truck components



* Excluding daily controls and the wear material replacements, on the end user's name

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Maintenance – main operations

- 1000 working hours
 - Traction unit (check bearings and wheels wear, oils, bolts tightening)
 - Electric components (check electric cable connection, battery health)
 - Brakes (check main component status and braking distances)
 - Chassis (check mast profile and bearing)
 - Lifting unit (check cylinders, chains and forks wear)
- 2000 hours
 - Check safety system of the trucks
 - Oil replacement





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Main options 1/2

- Tilting forks
- Integral sideshift (mandatory with tilting forks)
- 5th element control valve
- Side battery removal and battery stand
- Guide rollers (mandatory with Drive in version)
- Drive in version
- Load wheel cover
- Electric steering 180°/360°
- Load backrest (various height)
- Overhead protection (wire mesh or macrolon)
- Fabric or imitation leather seat
- Seat belt
- Object holder
- Cold store
- Cold store with cab
- Flashing beacon



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Main option 2/2

- Electrical provision for terminal and printer
- Working lights
- Camera along fork with monitor (cable transmission)
- Lift height indicator (3 mm precision)
- Lift height indicator for cold store (1 mm precision)
- Lift height pre-selector (8 areas / 20 levels each)
- 160 A or 320 A battery plugs
- FEM II B forks from 800 mm up to 1600 mm
- Joystick available via RMS/UPA and soon available from price list





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Main applications

- High throughput warehouses – distribution centres
- Industry, when used for indoor application only, as an alternative to CB trucks





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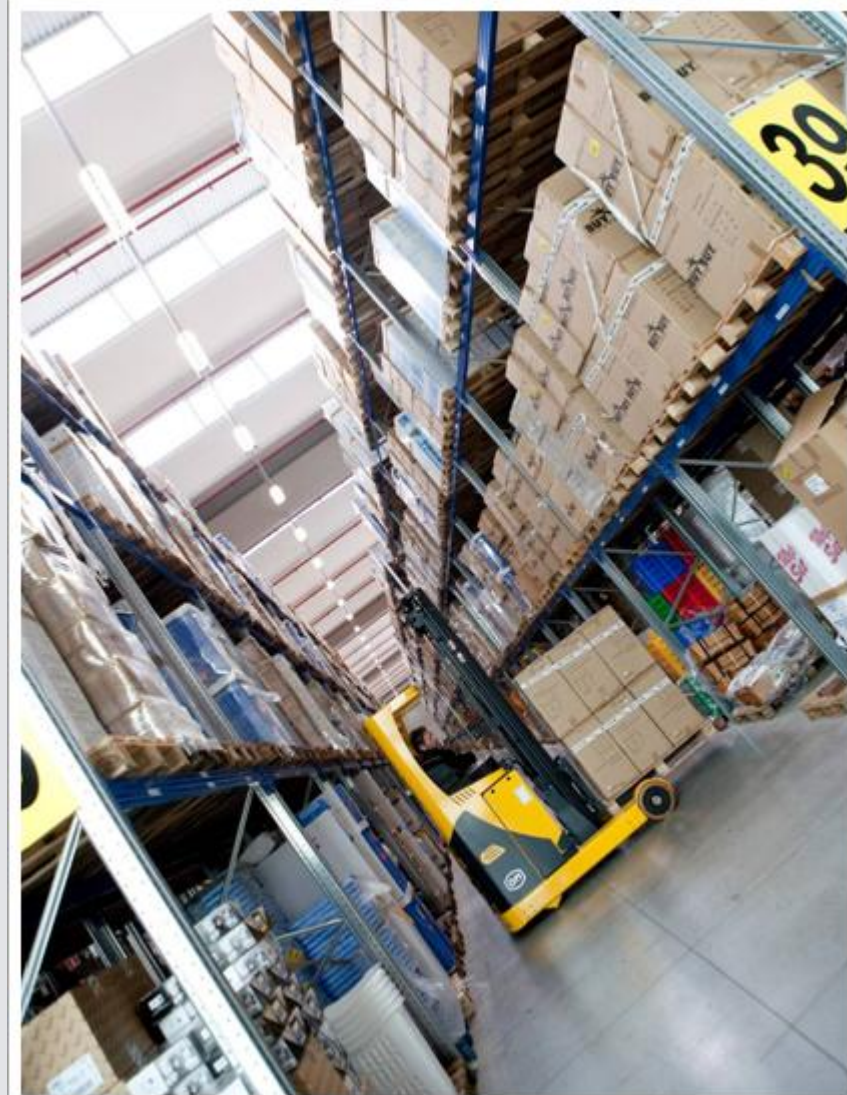
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Sales topics

- High availability
- Low maintenance costs
- With tilting mast: more competitive price
- With tilting mast: better visibility
- With tilting mast: easier load pick up/deposit in narrow aisles
- Renewed aesthetics





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Competitors comparisons*: Jungheinrich ETV series 1

PLUS

- Speed reduction when cornering (Curve Control)
- SOLO PILOT (as option MULTI PILOT)
- Wide range of capacities: 1,0 – 1,2 – 1,4 – 1,6 t
- Lifting up to $h_3 = 8.420$ mm (only for 1,4 and 1,6 t)
- Narrow overall width $b_1 = 1120$ mm (solo 1,0 – 1,2 t)



- Economic version
- Tilting forks version is not available
- Intermediate step not present
- Overhead guard surface too little → lack of driver protection
- Steering switch 180°/360° not available
- Not possible combined hydraulic movements
- Not available energy recover version during mast lowering

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: Jungheinrich ETV ETM series 2/3

PLUS

- Speed reduction when cornering (Curve Control)
- MULTI PILOT (option SOLO PILOT)
- Steering switch 180°/360°
- Both tilting mast and tilting forks are available
- ETM is the narrow version



- Intermediate step not present
- Overhead guard surface too little → lack of driver protection
- Possible only 2 combined hydraulic movements
- Energy recover during mast lowering available as option

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: TOYOTA BT Reflex RRM

PLUS

- Range of capacities 1,2 – 1,4 – 1,6 t
- Narrow overall width $b_1 = 1120$ mm
- 360° steering
- Intermediate step for an easy access to driver cabin
- Automatic electromagnetic brake



- Economic version only for light duty applications
- Lift motor only 7,4 kW
- Not all motors are AC
- Not available many feature available on RRE version

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: TOYOTA BT Reflex RRE

PLUS

- **Wide range of capacities: 1,4 – 1,6 – 1,8 – 2,0 – 2,5 t**
- **Joystick available as option**
- **Automatic electromagnetic brake**
- **TLC: safety system for forks speed control**



- **14 km/h traction speed is an expensive option**
- **With the new truck many feature are now option: weight indicator, tilting cab, lift height indicator**

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: Linde RxxS Active

PLUS

- S version for heavy duty applications (1,4 – 1,6 – 2,0 t)
- Patented Hi Vi masts for S version
- Reologic patented steering system
- Patented twin axis levers
- C is an economic version for light duty applications (1,0 – 1,2 – 1,4 t)



- Intermediate step not present
- Also handle is missing
- Steering console too big
→ problem for tall drivers

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: Linde RxxX

PLUS

- Futuristic design
- High level of visibility
- High level of comfort and ergonomics



- High costs
- This truck is not working like a normal reach truck
- Nominal capacity up to 1,7 t only

* Based on configurations used in several countries

MINUS



Competitors comparisons*: STILL FM-X

PLUS

- Wide capacity and version range
- Curve Speed Control available as option
- Optispeed available as option
- Complete list of options



- Tilting forks not available for 1,0 and 1,2 t versions
- Mast visibility is not as good as best competitors
- Many features available only as option

* Based on configurations used in several countries

MINUS

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Competitors comparisons*: Hyster Matrix

PLUS

- Large number of options available
- Simple and clear controls
- Powerful pump motor



- 1,2 t version missing
- Tilting mast missing

* Based on configurations used in several countries

MINUS

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		OM	JUNGHEINRICH		BT / TOYOTA		HYSTER	LINDE		STILL
Model		XR ⁰⁹ 14	ETV 114	ETV 214 / GE	RRE 140 M	RRE 140	R1.4	R14 C	R14 S	FM-X 14
Capacity	[Kg]	1400	1400	1400	1400	1400	1400	1400	1400	1400
Ast (pallet 800x1200 along forks) accordingly VDI 2198	[mm]	2749	2692	2692	2762	2737	2725	2690*	2715	2754
Height of seat, h7	[mm]	1050	960	960	-	1131	1075	940 / 1030	940 / 1030	1050 / 550
Lifting motor S3 15%	[kW]	11,5	10	10 (14*)	7,4	11	14	12	12	13
Lifting speed (loaded / unloaded)	[m/s]	0,36 / 0,60	0,37 / 0,65	0,44 / 0,70**	0,27 / 0,42	0,35 / 0,70	0,36 / 0,52	0,44 / 0,65*	0,34 / 0,60	0,43 / 0,68
Lowering speed (loaded / unloaded)	[m/s]	0,52 / 0,46	0,50 / 0,50	0,50 / 0,50	0,50 / 0,44	0,55 / 0,55	0,53 / 0,51	0,50 / 0,45*	0,55 / 0,45	0,56 / 0,52
Traction motor S2 60 min.	[kW]	6	6,9	6,9	7,5	7,5	6,4	6	6	6,5
Traction speed (loaded / unloaded)	[km/h]	12 / 12	10 / 10*	14/14	11,2 / 10	12 / 14	10 / 12	13,5 / 13,5*	13,5 / 13,5*	14 / 14

* load direction
-1 km

* as option
with energy
recover
system

* with
Simplex
mast

* reduced on
request

** depending
from type of
mast



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Thank you for your attention.

