Linde Factory Train Compact
FT08 C - FT20 C
Capacity: 800 - 2.000 kg

BR 8961

Safety

The innovative Factory Train Compact (FTC) brings a new dimension to efficient and safe material flows for production plants. The 3-point construction ensures that all wheels of the train remain in constant contact to the ground also on uneven surface applications. Raising goods on trolleys with the load carriers above the floor creates a load protecting, low-noise, low-wear and safe load handling process. An integral drive-lock prevents the tractor moving with lowered load carriers.

Linde Material Handling

Performance

The modular train principle with its interchangeable carriers is an efficient and cost-effective solution for a rapid external and internal load transfer. It allows for simultaneous transport of various goods on trolleys. The fully electrical steering is monitored permanently and gives a best in class directional driving stability. The shock absorbing elements combined with the optional available weather protection secure the goods from environmental impact. In case of route/requirement changes, load carriers can be swapped conveniently or combined differently to enhance the handling capacity and to keep the performance level high.

Comfort

The train delivers a comfortable and smooth driving and the quiet operating electrical spindle-lifting can be pre-lowered from the tractor or operated directly from the load carrier module. Load carriers for two or three trolleys keep the train and the walking deliveries. This, combined with the upright standing position for opening and closing the comfort-class weather protection, offers the best possible ergonomics for the operator.

Reliability

The FTC load carrier modules are designed for consistent reliability in demanding outdoor and indoor applications. The rugged construction of the low-maintenance modules, the backlash-free connections and the sturdy construction of the load carrier modules guarantee safe and stable transports for years.

Serviceability

Economy and durability of the FT Compact load carrier modules result in easy diagnosis and preventive maintenance. The CAN bus system enables all unit data to be read out for inspection when service is due or for the change of parameters. Easy accessibility of all components employed

Standard equipment/Optional equipment

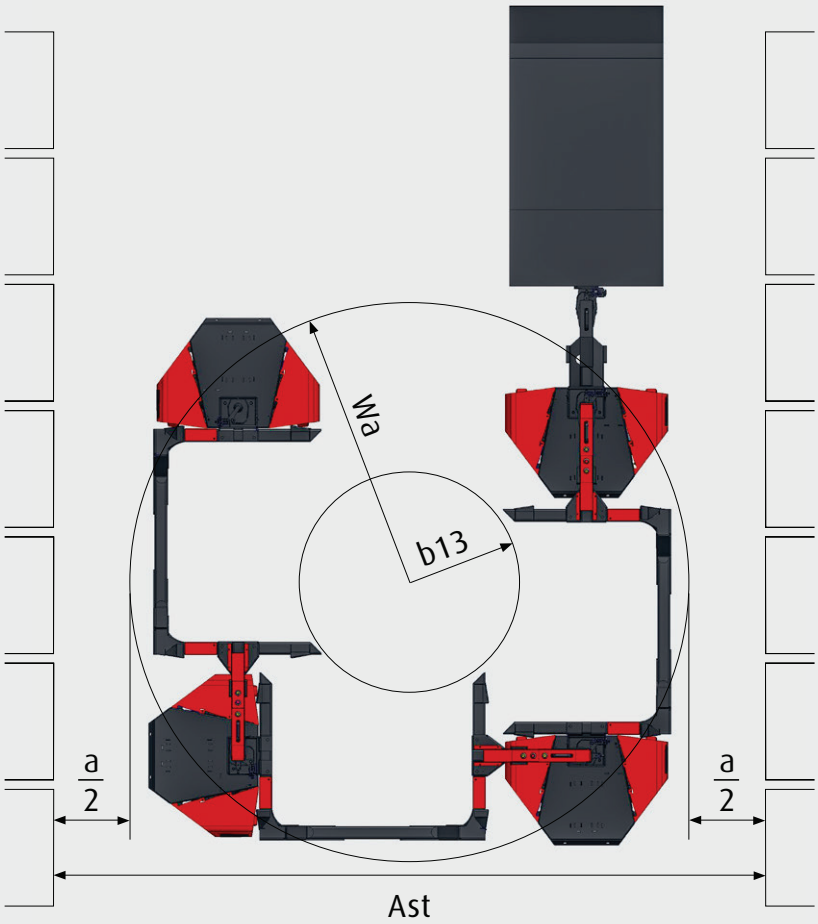
Standard equipment

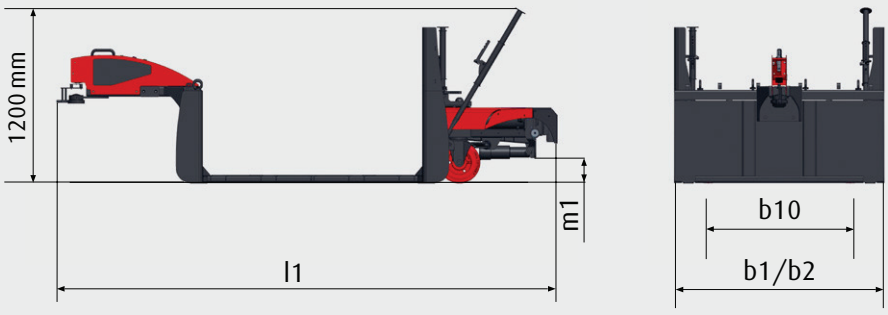
Standardized front module and load carrier modules with electrically powered lifting-spindles
Different types of customized, interchangeable load carrier modules
Capacity of 800 kg / 1000 kg / 1600 kg / 2000 kg
Load-carrier modules are equipped with PU-tires with diameter 250 mm
Possibility to lift different sizes of loads on trolleys from 400 x 600 up to 1200 x 2000 mm
Control console on truck and additional lift-operation at the load carrier module
CAN bus communication between tractor and modules
Automatic tractor drive-lock when load-carrier modules are lowered
Continuously monitored electrical steering system with active steering against drifting in curves
Adjustable lifting height: 0 – 80 mm
Lifting speed max. 10 mm/s
Economical energy consumption
Power connector to tractor and between modules
Crab motion for obliquely side positioning of the train
Operating hour meter and maintenance indicator
Driving backwards possible for short distance
Slow speed in curves until the last axle of the train is back in straight direction
Lowering only possible with activated handbrake
Different load carrier modules available: C-frame, E-frame with fixed or adjustable forks, Bridge-frame, Platform-frame, QS-frame
Linde red/anthracite paintwork

Requires adaptation of the tractor (electrical connector, control console)

Optional equipment

Weather protection with roll-up curtain at the load carrier modules
Customized load carrier modules adapt to existing trolleys
Glide- and wear strips at trolley contact-surfaces
Other load/trolley dimensions
Weather protection with printed logo
Outdoor package with SE-twin-tires
Lighting equipment at the last load carrier module (Rear-, brake- and flashing light, rotating light)
Remote diagnostics
Alternative paintwork
Further options on request


Wa
b13
a/2
a/2
Ast


1200 mm
m1
l1
b10
b1/b2

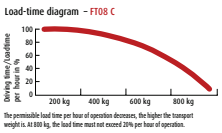
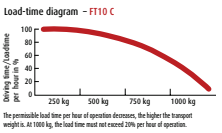
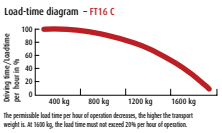
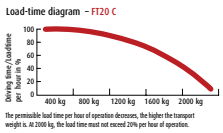
Key characteristics (according VDI 2198)

Characteristics	1.1	Manufacturer		Neumaier	Neumaier
	1.2	Model designation		Front module FT08 C / FT10 C	Front module FT16 C / FT20 C
	1.2a	Series		8961	8961
	1.5	Load capacity [1]	Q[t]	0.8/1.0	1.6/2.0
	1.6	Load centre		-	-
	1.8	Axle centre to fork		-	-
	1.9	Wheelbase		-	-
Weights	2.1	Service Weight [2]	[kg]	210/280	280/350
Wheels/Tyres	3.1	Tyres [3]		bandage tires	bandage tires
	3.2	Tyres size, front		-	-
	3.3	Tyres size, rear [4]		250	250
	3.5	Wheels, number [5]		2	2/4
	3.6	Track width, front	b10[mm]	880/1250	1250/1600
Dimensions	4.1	Mast/fork carriage tilt, forward/backward		-	-
	4.2	Height of mast, lowerered		-	-
	4.4	Lift	h3[mm]	0-80	0-80
	4.4d	Lift function		electrical spindles	electrical spindles
	4.5	Height of mast, extended		-	-
	4.12	Towing coupling height	h10[mm]	front side: tractor	front side: tractor
	4.15	fork height, lowered		-	-
	4.19	Overall length [7]	l1[mm]	1380	1380
	4.21	Overall width	b1[mm]	1060	1475
	4.21.6	Load Length	l6[mm]	-	-
	4.21.7	Load width	b12[mm]	-	-
	4.22	Fork dimension		-	-
	4.25	Fork spread, min/max		-	-
	4.31	Ground clearance [8]	m1[mm]	130	130
	4.35	Turning radius of the train [9]	Wa[mm]	2100	2300
	4.36	Minimum pivoting point distance		-	-
Performance	5.2	Lifting speed, with/without load	[m/s]	0,01	0,01
	5.3	Lowering speed, with/without load	[m/s]	0,01	0,01
	5.7	Climbing abilitiy, with/without load	[%]	see tractor diagramm	see tractor diagramm
	5.10	Service brake		-	-
	6.2	Lift motor rating at SE 15%	[kW]	0,216	0,216
	8.5	Towing coupling: design/type		front Linde, train. System Neumaier	front Linde, train. System Neumaier

[1] Values analog to FT08 C / FT10 C / FT16 C / FT20 C
[2] Values analog to track widths front (see 3.6)
[3] Optional outdoor package available with SE twin tyres
[4] Tyres size FT16 C / FT20 C with SE twin tyres: 306 mm
[5] The wheels of FT20 C are fitted with twin tyres
[6] Track width 880/1250 mm for load capacity 0.8/1.0t; track width 1250/1600 mm for load capacity 1.6/2.0t
[7] Values analog to load dimensions 1200x800 / 1200x1000 / 1800x1200 / 2700x1200 mm
[8] Ground clearance FT16 C / FT20 C with SE twin tyres: 186 mm
[9] Value given only for load dimension 1200x800 mm

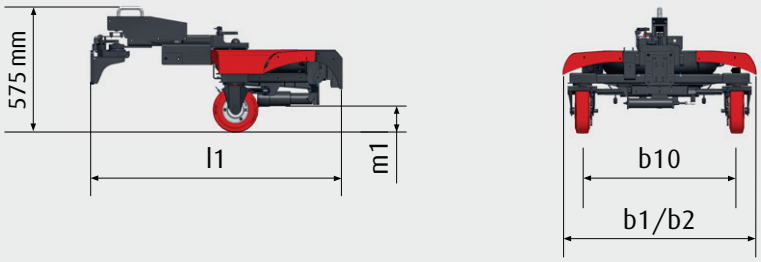
Neumaier	Neumaier	Neumaier	Neumaier
C-frame / E-frame	C-frame / E-frame	QS- frame / Platform-frame	Bridge Frame
8961	8961	8961	8961
0.8/1.0	1.6/2.0	0.8/1.0/1.6/2.0	0.8/1.0/1.6/2.0
-	-	-	-
-	-	-	-
-	-	-	-
310	410	600	600
bandage tires	bandage tires	bandage tires	bandage tires
-	-	-	-
250	250	250	250
2	2/4	2/4	2/4
880/1250	1250/1600	880/1250/1600[6]	880/1250/1600[6]
-	-	-	-
-	-	-	-
0-80	0-80	0-80	0-80
electrical spindles	electrical spindles	electrical spindles	electrical spindles
-	-	-	-
-	-	-	-
-	-	-	-
2960/3060/3760/4660	2960/3060/3760/4660	3060/3160/3860/4760	3060/3160/3860/4760
1100/1300	1475	1475	1475
1240/1240/1840/2740	1240/1240/1840/2740	1240/1240/1840/2740	1240/1240/1840/2740
840/1040/1240/1240	840/1040/1240/1240	840/1040/1240/1240	840/1040/1240/1240
-	-	-	-
-	-	-	-
130	130	130	130
2100	2300	2100/2100/2300/2300	2100/2100/2300/2300
-	-	-	-
0,01	0,01	0,01	0,01
0,01	0,01	0,01	0,01
see tractor diagramm	see tractor diagramm	see tractor diagramm	see tractor diagramm
-	-	-	-
0,216	0,216	0,216	0,216
System Neumaier	System Neumaier	System Neumaier	System Neumaier

Additional details

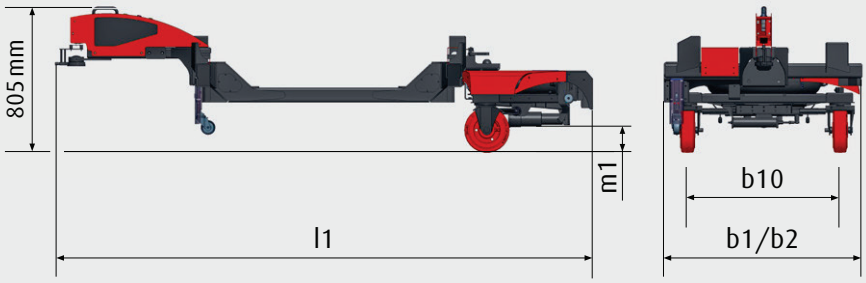
Manufacturer		Neumaier	Neumaier	Neumaier	Neumaier
Model designation		FT08 C / FT10 C	FT16 C / FT20 C	FT16 C / FT20 C	FT16 C / FT20 C
Series		8961	8961	8961	8961
Application		Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor
Tractor adaptation		Power socket 48V / 80V operation panel	Power socket 48V / 80V operation panel	Power socket 48V / 80V operation panel	Power socket 48V / 80V operation panel
Lift function		Scissor lifting	Scissor lifting	Scissor lifting	Scissor lifting
Steering system		Fully electrical steering	Fully electrical steering	Fully electrical steering	Fully electrical steering
Suspension		serially / integrated into modules (stroke: 15 mm)	serially / integrated into modules (stroke: 15 mm)	serially / integrated into modules (stroke: 15 mm)	serially / integrated into modules (stroke: 15 mm)
Opening for loading/unloading					
C-frame/E-frame		one side (changeable)	one side (changeable)	one side (changeable)	one side (changeable)
Bridge-frame		open to both sides	open to both sides	open to both sides	open to both sides
QS-frame		open to both sides	open to both sides	open to both sides	open to both sides
Length of train (without tractor)[10]	(m)				
with 2 load carrier modules		5,87	5,87	5,63	5,63
with 3 load carrier modules		8,14	8,14	8,14	8,14
with 4 load carrier modules		10,41	10,41	10,41	10,41
with 5 load carrier modules		12,68	12,68	12,68	12,68
Weight of train (without tractor)[10]					
with 2 load carrier modules	(kg)	830	900	1100	1170
with 3 load carrier modules		1140	1210	1510	1580
with 4 load carrier modules		1450	1520	1920	1990
with 5 load carrier modules		1760	1830	2330	2400
Load-time diagram for SE-wheels					
Options					
Weather protection		√	√	√	√
weighing system		√	√	√	√
Graphical display, digital		√	√	√	√
Lighting in accordance with regulations		√	√	√	√

[10] Values for load dimension 1200x800 mm

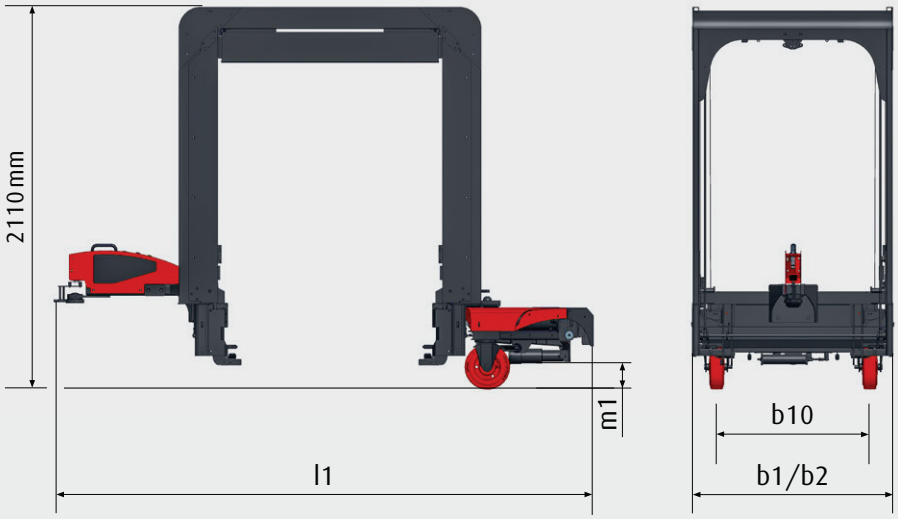
Front module



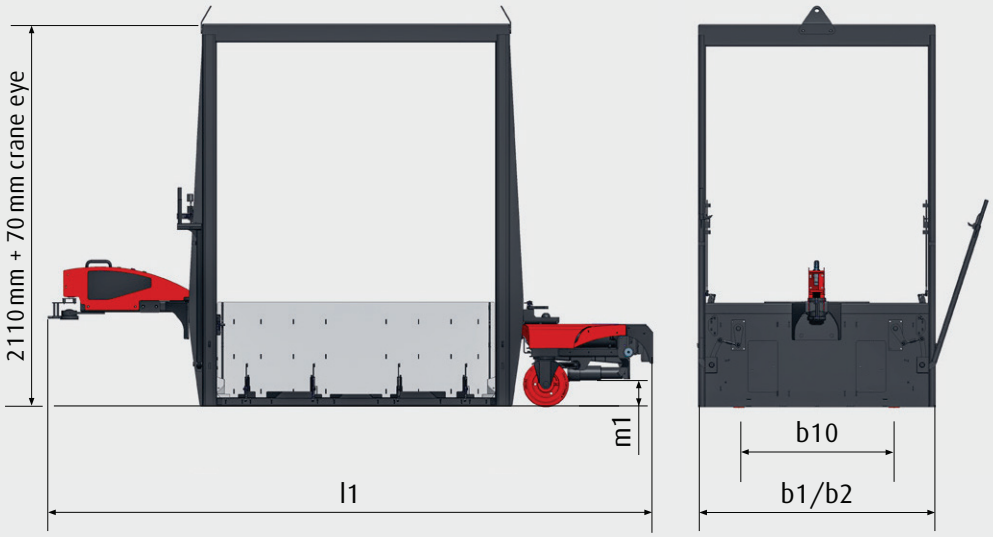
C-frame / E-frame



Bridge Frame



QS-frame



Product information

Directionally stable train
- → Fully electrical steering, permanently monitored for best manoeuvrability
- → Optimized driving-behaviour: fully electrical steering with active curve correction
- → Train designed for a superbly controlled narrow cornering

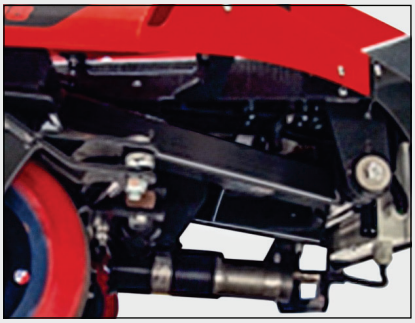
Silent
- → Silent lifting and lowering due to spindle drive
- → Backlash-free load-carrier-module connections
- → suspension and tight fits avoid noise generation

Serviceability
- → Easily maintained basic construction
- → CAN bus controller with data memory
- → Wheels and rollers are easily accessible for exchange
- → Functional elements and bearings are service-friendly accessible and exchangeable

Energy management
- → Energy-optimized lifting system
- → Reduced rolling resistance by optimized bearings

Safety
- → Drive lock function: The train cannot be driven before the load is lifted
- → Lowering only possible with activated handbrake
- → Slow speed in curves until the last axle of the train is back in straight direction

Operation
- → Time-saving pre-lifting and pre–lowering of the load carriers operated from the control console at the tow tractor
- → For on-site-control the lift can be operated directly at the module
- → Console provides visual feedback of lift-units positions
- → CAN bus control system avoids driving with lowered load carriers



Lifting device
- → Load carrier module lifting height 0 -80 mm
- → Form-fitted trolley locking
- → Quiet, electrically powered recirculating ball screw spindles for lifting have integrated shock absorption

Module / load carrier coupling
- → Unique train without drawbars but articulated steering system
- → No fit tolerances between module - load-carrier connections
- → Silent operating train

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Linde Material Handling