### NICHIYU

# den sa 11

### ELECTRIC LIFT TRUCK RACK FORKLIFT TRUCKS RFTL, RFTL-T Series



### The Rack Fork System

### *The total solution for higher, larger, more efficient use of space. It's the breakthrough warehouse managers have been waiting for.*

Demand for more efficient warehouse logistics has never been greater. Increased storage area and more effective use of limited space are the major needs. The Rack Fork Series of electric forklifts is the market leader for medium-height rack applications. Our latest models now meet modern logistics needs with AC control and an electric turret head. Best of all, the Rack Fork Series incorporates Nichiyu's legendary technical excellence and vast experience in electric forklift trucks.

### **Offers Three-directional Loading.**

The Rack Fork Series handles loads from three directions by means of shift-and-rotate operation or with conventional forward loading and unloading. No turning of the truck is required.



### Accommodates Aisles Only 1480 mm Wide.

Compared to reach trucks, the Rack Fork Series accommodates significantly narrower aisles only 1480 mm wide. An ideal combination of capacity and efficiency, the Rack Fork Junior Series offers a maximum lift height of 7.5 meters.





ractical right angle stacking aisle width with FBR15-75 (1100×1100 mm pallet)

(1100 × 1200 mm pallet)

### Advantages



### Greatly increases the storage capacity of your current warehouse.

Doubles your storage capacity all at once. Easily handles peak cargo volumes.



### **CASE 3** Even warehouses with many pillars can be redesigned for minimal loss of space.

Many warehouses operated as logistics centers have 7 to 9 meter spans between pillars. Now such pillars can be incorporated within racks to correct layouts difficult for conventional trucks to maneuver around.



Adds 27% to your existing open floor space. Provides additional margin to the flow path of any logistics center.







Now with AC control and electric turret head for enhanced functionality and extended operating time.





Photo: RFTL10-75 with optional mast-mounted



### **Enhanced Basic Operability**

### Traveling speed 10.0 km/h

(Model RFTL10-75, unladen)

The innovative AC motor ensures smoother and more powerful travel.

### Lifting speed 370 mm/s

(Model RFTL10-75, unladen)

A new AC motor has been adopted for lifting. Lifting speed has been increased by 6% compared with our previous models while providing smoother operation.



have increased the number of travel control stages to 500 from 16 (with previous model).

### **More Comfortable Operation**

### Greatly reduced impact noise during lifting and lowering (soft ending, changing, and landing)

**Soft ending** (optional on the RFTL and RFTL-T) Ensures a slow speed when approaching the highest point on the mast.

### Soft changing

With a three-stage mast, the lifting shock is reduced at the cylinder changeover during lifting and lowering.\*

### Soft landing

When the fork is lowered to 100 mm before contact with the ground, the lowering speed is slightly reduced and the impact noise is softened when the fork lands at the end of its range (unladen).\*



\* Standard equipment on all RFTL(A)/RFTL-T-75 models

### Advanced Electric Turret Head\*

### Minimizes the shock to the load while reducing energy consumption by 50% for enhanced operability.\*\*

We have changed the shift-and-rotate motion from a conventional hydraulic drive to an electric motor drive. This innovation offers exceptionally smooth and quiet operation while providing greater energy efficiency.

\* Standard equipment on Models RFTL(A)10/12/15-75 \*\* Actual measurement from Nichiyu's test course

### Noise reduced to 55 dB



Nichivu's actual measurement of shift and

rotate function with 1.0-ton model (unladen)



Rack Fork Cycle

150%

The work cycle per charge is about 50% greater than that of a previous forklift truck.\*\*



carried, the head can be turned in an aisle. (Uperations should \* Models RFTL(A)10/12/15-75

### For More Comfortable Operation

### Numerous functions contribute to ease of operation.

The comfortable, ergonomically designed cockpit ensures hours of fatigue-free operation.



Photo: RFTL10-75

### Innovative joystick-type shift & rotate lever

The innovative joystick enables single-lever activation of the shift & rotate mechanism. In addition, the electric turret head and smooth interlocking provide for smooth and efficient loading work.



Photo: RFTL10T-75

Triple-lever operation that feels just like a forklift

Each operation-lift, shift and rotate — is controlled by its own lever, all mounted in a row. This also enables simultaneous shift-and-rotate operation (hydraulic type).



The display features a vacuum fluorescent display (VFD) providing excellent visibility. It is capable of displaying regular information such as remaining battery capacity, traveling speed, traveling distance, and date and time. In addition, it displays the mode settings as required, multi-hour meters, and reserve battery charge. Should a malfunction occur, the error display screen automatically appears to display the error code and details.

### Safer, More Secure Operation

### Automatic lifting stop function for secure loading

### With optional Full Auto Stack and Semi Auto Stack Devices



### Full Auto Stack:

Lifts to higher positions can be registered beforehand for one-button operation. Therefore, operations such as insertion (manual), inching and retrieval can be performed automatically.

### Semi Auto Stack:

Perform lifts automatically at the touch of a button. (Both full auto stack and semi auto stack can be set to AB changeover in a maximum of nine stages.)

### With optional Simple Semi-auto Stack Device Jr. T



The stage heights for stopping, loading and unloading can be preset in six stages. Simply pulling the lift lever automatically stops the forks at the designated stage height. This feature is helpful for working at higher lift heights.

### For handling work at higher lift heights

with confidence (Smooth operation with stageless control) Smooth operation is possible thanks to the stageless control of the electric turret head. This greatly reduces shaking of the mast at higher lift heights. The result is safer and more accurate operation.



### A variety of operator-centered safety devices 🧾 📿

Various interlocks are provided as standard to prevent unintentional or accidental traveling and operation.

### Fork positions for traveling



The interlock prevents travel when the forks are in any other position.



### Fork view monitor

### Camera & Monitoring System ensures a more secure unloading operation

### Fork view monitor (Optional)

This system captures the pallet emitted by laser beam with a small camera and displays it on a screen.



## Fork side

Switch ON

Laser beam emitting and camera monitoring start

### step 2] Check the insertion point on the monitor and start unloading operation.

The pallet-insertion point is displayed on the monitor via the camera mounted to the base of the fork.



### The Best Systems for Your Logistics Site Rack Fork Jr. & Pallet Rack (Order Picker, Walkie Trucks) The Rack Fork Junior can be used for warehousing with a pallet load, an order picker for carry out case picking, and the walkie trucks for case picking from the bottom-most stage. Because the aisle width requirement is only about 1.5 meter, the same as that of a forklift, storage efficiency is increased and picking from both sides is possible. Thus, you will save space and work more efficiently. About 1.5 m Warehousing Carry out

### **Rack Fork Jr.** & an Electric Motor-powered Movable Shelving System

Maximize your storage capacity by combining an electrically powered movable shelving system that requires only one aisle. The movable shelves can be opened and closed easily by remote control while the operator rides on the Rack Fork Junior. This is an optimal design for sites requiring the most efficient use of capacity in a limited space. We provide the best systems for commercial warehouses, freezer warehouses and various other logistics sites.



### An extensive product lineup and a delivery record of success



Combined with the electric motor-powered Movable Shelving System "Nichiyu Pack".



Improves storage efficiency and safety.



Stepless shift control ensures smooth handling.



Multiple trucks speed up job completion times.



Combine the "Pallet Picker" to handle case picking.







### **Rack Fork Junior Specifications**

				Unit	RFTL10-75	RFTL12-75	RFTL15-75	RFTLA10-75	RFTLA12-75	RFTLA15-75			
	Capacity			kg	1000	1200	1500	1000	1200	1500			
	Load dimensions (L x W)			mm			1100;	×1200					
	Load center	Load center					5	50					
erformance	Lift height A			mm			/	4					
	Lift height (Maximum)			mm		6500			7500				
	Lifting speed	Laden		mm/s	340	310	270	330	280	270			
		Unladen		mm/s	370	350	310	370	310				
	Traveling speed	Laden		km/h	9.5	9	8	9	8.5	8			
-		Unladen		km/h	10	9.5	8.5	9.5	9	8.5			
	Rotating speed o	f forks		s/180°	12	14	13	12	14	13			
	Shift speed			mm/s	240	230	220	240	230	220			
	Main aisle width (calculated)			mm	3120	3120	3300	3280	3280	3300			
	Stacking aisle width B			mm	1480	15	80	1480	1580				
	Overall length		С	mm	2725	2745	2895		2895				
	Overall width (wit	Overall width (with across guide rollers)		mm	1450	1450 1550		1450	1550				
	Overhead guard	Overhead guard height E			2330								
ions	Fork length			mm	850								
ens	Wheelbase		F	mm	15	00	1650		1621				
Dim	Front overhang		G	mm	715	740	760	765	769	789			
	Shift stroke		Η	mm	1175	1270	1200	1175	1270	1200			
	Lowered fork hei	ght	Ι	mm	60 (to bottom of fork)								
	Minimum turning	g radius	J	mm	1760 1910 1880								
6	Drive			mm	ø 380*165 Rubber								
yre	Load			mm	$\phi$ 127*92 Urethane	<i>φ</i> 140*127	Urethane						
-	Casters			mm					∮204*76 Urethane	)			
		Travel		kW			!	5					
		Control method					Inve	erter					
0	Matan	Hydraulic		kW			1	1					
ontr	IVIOLOFS	Control method			Inverter								
C		Steering		kW	0.3								
		Control method					FET ch	nopper					
	Shift & Rotate drive method						Electric / Fl	ET chopper					
2	Battery capacity	48 V		Ah/5HR	32	20		37	0				
atter	Charger	Туре			Built-in 4.3 kVA / S	Stationary 4.7 kVA		Built-in 5.2 kVA / S	Stationary 6.5 kVA				
Ba	Recharging syste	em					Y	es					

Lift height (mm	)	Model	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
		RFTL10	3765	4265	4765	5265	5765	6265	6765	7265	-	-
		RFTLA10	3765	4265	4765	5265	5765	6265	6765	7265	7765	8265
Overall height (mm)		RFTL12	3765	4265	4765	5265	5765	6265	6765	7265	-	-
Overall neight (initi)	L L	RFTLA12	3765	4265	4765	5265	5765	6265	6765	7265	7765	8265
		RFTL15	4015	4515	5015	5515	6015	6515	7015	7515	-	-
		RFTLA15	4015	4515	5015	5515	6015	6515	7015	7515	8015	8515
		RFTL10	2295	2545	2795	3045	3295	3545	3795	4045	-	-
		RFTLA10	2295	2545	2795	3045	3295	3545	3795	4045	4295	4545
Height of mast		RFTL12	2295	2545	2795	3045	3295	3545	3795	4045	-	-
(mast lowered) (mm)	IVI	RFTLA12	2295	2545	2795	3045	3295	3545	3795	4045	4295	4545
		RFTL15	2545	2795	3045	3295	3545	3795	4045	4295	-	-
		RFTLA15	2545	2795	3045	3295	3545	3795	4045	4295	4545	4795
		RFTL10	2440	2690	2940	3190	3440	3690	3940	4190	-	-
Mast boight		RFTLA10	2440	2690	2940	3190	3440	3690	3940	4190	4440	4690
during traveling	N	RFTL12	2440	2690	2940	3190	3440	3690	3940	4190	-	-
(at 250 mm lift) (mm)	IN	RFTLA12	2440	2690	2940	3190	3440	3690	3940	4045         4295           4295         -           4295         4545           4190         -           4190         -           4190         -           4190         -           4190         -           4190         -           4440         4690           750         -           1000         900	4690	
(at 550 mm mt) (mm)		RFTL15	2690	2940	3190	3440	3690	3940	4190	4440	-	-
		RFTLA15	2690	2940	3190	3440	3690	3940	4190	4440	4690	4940
		RFTL10	1000	1000	1000	1000	1000	870	800	750	-	-
		RFTLA10	1000	1000	1000	1000	1000	1000	1000	1000	900	800
Consoity (kg)		RFTL12	1200	1200	1200	1170	1070	1000	950	900	-	-
Gapacity (Kg)		RFTLA12	1200	1200	1200	1200	1200	1150	1100	1050	1020	1000
		RFTL15	1500	1500	1450	1330	1230	1070	970	900	-	-
		RFTLA15	1500	1500	1500	1500	1350	1230	1150	1080	1030	1000
		RFTL10	3620	3670	3850	3940	3980	4030	4080	4170	-	-
		RFTLA10	3950	4010	4060	4170	4260	4540	4620	4690	4750	4800
Sonuico wojaht (k	a)	RFTL12	3740	3790	3930	4030	4070	4120	4180	4260	-	-
Service weight (k	y)	RFTLA12	4040	4100	4160	4270	4550	4630	4720	4780	4840	4900
		RFTL15	4130	4180	4410	4460	4510	4580	4660	4710	-	-
		RFTLA15	4290	4350	4660	4720	4780	4860	4970	5030	5090	5150

 Notes: 1. The above drawing and table indicate a pallet size of 1100 (L) X 1200 (W) mm. Different pallet sizes would result in changes in the above figures.
 2. The figures in the above figure and table apply to models with a standard mast (two-stage mast). Specifications differ for models with a three-stage mast.
 3. Different pallet sizes require changes in aisle width, shift stroke, and boom size.

 4. The standard guide roller is installed only on the lower part; for unit with up to 6000 mm mast, installed on the upper part as well for unit with higher than 6000 mm mast.

5. The rack height determines the height of the upper guide roller position.
The width of the guide roller is calculated as shown below.
Width of upper guide roller (when cargo is aligned to rack edge) = Stacking aisle width - 40
Width of lower guide roller (when cargo overhangs rack) = Stacking aisle width + 20
Width of lower guide roller stacking aisle width - 30
6. Clearance is not included in the main aisle width calculation.
\* All specifications are subject to change without notice due to further improvement or modifications.



### **Rack Fork Junior T Specifications**

				Unit	RFTL7T-75	RFTL10T-75	RFTL12T-75	RFTL15T-75					
	Capacity			kg	700	1000	1200	1500					
	Load dimensions (L x W)			mm		1100>	<1100						
Performance	Load center	Load center		mm		55	50						
	Lift height A		mm		A	A							
	Lift height (Maximum)			mm		6000							
	Lifting speed	Laden		mm/s	360	340	300	270					
		Unladen		mm/s	430	410	350	310					
	Traveling speed	Laden		km/h	9.	5	9	8					
		Unladen		km/h	1	D	9.5	8.5					
	Rotating speed o	f forks		s/180°	8	9	10	11					
	Shift speed			mm/s	24	0	230	210					
	Main aisle width (calculated)			mm	2880	30	80	3250					
$\geq$	Stacking aisle wi	dth	В	mm	> 14	80	15	0					
	Overall length		С	mm	2560	2725	2745	2895					
	Overall width (with across guide rollers)		D	mm	14	50	550						
	Overhead guard height E		mm	2255 2330									
ons	Fork length		mm	850									
ensi	Wheelbase F			mm	1348	15	00	1650					
j	Front overhang G			mm	715	730	750	785					
	Shift stroke H			mm	1210	1180	1280	1210					
	Lowered fork hei	Lowered fork height I			60 (to bottom of fork)								
	Minimum turning	g radius	J	mm	1585	17	1910						
s	Drive			mm									
lyre	Load			mm	φ 127*92	Urethane	<i>φ</i> 140*127	Urethane					
_	Casters			mm	∳ 178*73 Rubber		<i>ϕ</i> 204*76 Rubber						
		Travel		kW	4.3	5							
		Control method			Inverter								
2	Motoro	Hydraulic		kW	8.8 11								
Cont	IVIOLOIS	Control method				Inve	erter						
0		Steering		kW		0.	.3						
		Control method				FET ch	lopper						
	Shift & Rotate dr	Shift & Rotate drive method				Hydraulic							
≥	Battery capacity	48 V		Ah/5HR	210	28	30	320					
atter	Charger	Туре			Built-in 3.0 kVA / Stationary 3.8 kVA	Bu	ilt-in 4.3 kVA / Stationary 4.7 k	VA					
Ba	Recharging system				Yes								

Lift height (mm)		Model	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
		RFTL7T	3670	4170	4670	5170	5670	6170	6670	-	-	-
Overall height (mm)		RFTL10T	3765	4265	4765	5265	5765	6265	6765	-	-	-
Overall neight (mm)	L	RFTL12T	3765	4265	4765	5265	5765	6265	6765	-	7000	-
		RFTL15T	4015	4515	5015	5515	6015	6515	7015	-	-	-
		RFTL7T	2195	2445	445 2695 2945 3195 3345 3695	-	-	-				
Height of mast	54	RFTL10T	2295	2545	2795	3045	3295	3545	3795	-	-	-
(mast lowered) (mm)	IVI	RFTL12T	2295	2545	2795	3045	3295	3545	3795	-	-	-
		RFTL15T	2545	2795	3045	3295	3545	3795	4045	-	-	-
Maathainht		RFTL7T	2340	2590	2840	3090	3340	3590	3840	-		-
lviast neight	N	RFTL10T	2440	2690	2940	3190	3440	3690	3940	-	-	-
(at 2E0 mm lift) (mm)	IN	RFTL12T	2440	2690	2940	3190	3440	3690	3940	-	-	-
(at 550 mm mt) (mm)		RFTL15T	2690	2940	3190	3440	3690	3940	4190	-	-	-
		RFTL7T	700	700	700	630	580	530	500	-	-	-
Connecity (kg)		RFTL10T	1000	1000	1000	1000	1000	870	800	-	-	-
Gapacity (Kg)		RFTL12T	1200	1200	1200	1170	1070	1000	950	-	-	-
		RFTL15T	1500	1500	1450	1330	1230	1070	970	-	-	-
Or a first section by (1 a)		RFTL7T	2660	2700	2880	2930	2970	3020	3060	-	-	-
		RFTL10T	3450	3500	3880	3980	4020	4070	4120	-	-	-
Service weight (k)	y)	RFTL12T	3560	3620	4020	4090	4150	4210	4310	-	-	-
		RFTL15T	3960	4010	4460	4510	4550	4630	4700	-	-	-

Notes: 1. The above drawing and table indicate a pallet size of 1100 (L) X 1100 (W) mm. Different pallet sizes would result in changes in the above figures.

changes in the above figure and table apply to models with a standard mast (two-stage mast). Specifications differ for models with a three-stage mast. 3. Different pallet sizes require changes in aisle width, shift stroke, and boom size. 4. The standard quide roller is installed only on the lower part (or unit with up to 6000 mm mast, installed on the upper part as well for unit with higher than 6000 mm mast (excluding models RFTL7T).

5. The rack height determines the height of the upper guide roller position. The width of the guide roller is calculated as shown below. Width of upper guide roller (when cargo userhangs rack) = Stacking aisle width - 340 Width of upper guide roller (when cargo overhangs rack) = Stacking aisle width + 20 Width of lower guide roller = Stacking aisle width - 330

Clearance is not included in the main asle width calculation.
 \* All specifications are subject to change without notice due to further improvement or modifications.

### The Rack Fork Junior Series product line is available in various specialized configurations.

### Explosion-proof Specification

Cold Storage Specification

Suitable for material handling operations in severely dusty environments.

Suitable for handling hazardous products in a Class 2 hazardous environment.

### Suitable for working both outdoors and inside refrigerated warehouses down to -35C.

### **Specifications and Equipment**

	Item			RFTL12	RFTL15	RFTLA10	RFTLA12	RFTLA15	RFTL7T	RFTL10T	RFTL12T	RFTL15T
	Traveling AC control		0	0	0	0	0	0	0	0	0	0
_	Hydraulic AC control		0	0	0	0	0	0	0	0	0	0
ntro	Shift & rotate drive method	Electric	0	0	0	0	0	0				
ပိ		Hydraulic							0	0	0	0
	Smooth interlocking	0	0	0	0	0	0					
ions	L (maximum) mm			1400			1400		1300		1400	1
Dimens	W (maximum) mm			1600		1600			1300	1300 1500		
	Soft landing	0	0	0	0	0	0	0	0	0	0	
0	Soft changing (available for t	hree-stage masts only)	0	0	0	0	0	0	0	0	0	0
	Soft ending	Δ	Δ	Δ	Δ	Δ	Δ	Δ	$\triangle$	Δ	Δ	
ices	Neutral safety	0	0	0	0	0	0	0	0	0	0	
Dev	Safety cruise		0	0	0	0	0	0	0	0	0	0
fety	Auto torque increase		0	0	0	0	0	0	0	0	0	0
Sa	Auto power off		0	0	0	0	0	0	0	0	0	0
	Shift & rotate stageless chan	geover	0	0	0	0	0	0				
	Various traveling interlocks		0	0	0	0	0	0				
ve	Coasting*		0	0	0	0	0	0	0	0	0	0
erati	Plugging		0	0	0	0	0	0	0	0	0	0
Gor	Braking	0	0	0	0	0	0	0	0	0	0	
Re	Speed suppression when des	0	0	0	0	0	0	0	0	0	0	
	Simple semi auto stack (stan	dard 6-stage)							Δ	$\triangle$	$\triangle$	$\triangle$
ack	Semi auto stack (AB switch,	9 stages each)	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$				
o Stá	Semi auto stack with inching	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$					
Auto	Full auto stack (AB switch, 9	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$					
	Full auto stack with sensor (A	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$					
oller	Lower guide rollers	4 pcs.	0	0	0	0	0	0	0	0	0	0
de R(	Upper guide rollers	Standard for lift heights exceeding 6000 mm	$\triangle$		$\triangle$							
Gui	Modification of guide roller w	$\bigtriangleup$	$\triangle$									
Aids	Travel stop position mark		$\triangle$	$\triangle$	$\triangle$	Δ	$\triangle$	$\triangle$	Δ	$\triangle$		
dling	Lift stop position mark		$\triangle$	$\triangle$	$\triangle$	Δ	$\triangle$	$\triangle$	$\triangle$	$\triangle$		
Han	Address pointer	$\triangle$	$\triangle$	$\triangle$	Δ	$\triangle$	$\triangle$	$\triangle$	$\triangle$	$\triangle$	Δ	
	VFD (vacuum fluorescent dis	play)	0	0	0	0	0	0	0	0	0	0
lay	Safety monitor		0	0	0	0	0	0	0	0	0	0
Disp	Text warning		0	0	0	0	0	0	0	0	0	0
onal	Multi-hour meter		0	0	0	0	0	0	0	0	0	0
nctiv	Odometer		0	0	0	0	0	0	0	0	0	0
ultifu	Clock with calendar		0	0	0	0	0	0	0	0	0	0
ž	Battery discharge indicator		0	0	0	0	0	0	0	0	0	0
	Speed meter		0	0	0	0	0	0	0	0	0	0
rger	Reserve charge		0	0	0	0	0	0	0	0	0	0
Che	Charging status monitor	0	0	0	0	0	0	0	0	0	0	
ilt-in	Charge time extention for low	0	0	0	0	0	0	0	0	0	0	
Bu	Supplemental thermal charge	3	0	0	0	0	0	0	0	0	0	0
SS	Capacity					48	3V		1			
	201 Ah/5HK								0			
tteri	210 Ah/5HR								0	-		
Bat	280 Ah/5HR		0	-					$\triangle$	0	0	
	320 Ah/5HR		0	0						Δ		0
	370 Ah/5HR	$\triangle$	$\triangle$	0	0	0	0		$\triangle$	$\triangle$	$\triangle$	

△ Options

Standard equipment
 \* Regeneration is adjustable in four stages: LOW, MID, HIGH and NON.
 \* Some combinations of specifications may not be available. Please contact your Nichiyu dealer.
 All specifications are subject to change without notice.

All specifications have been determined according to Nichiyu's terms and conditions. Specifications are subject to change without notice in the interests of product improvement.



### Nippon Yusoki Co., Ltd.