# NICHIYU

# den sa 11

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



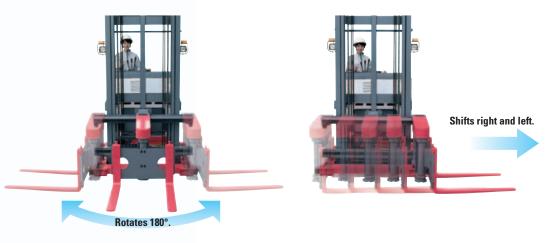
# The Rack Fork System

### *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.**

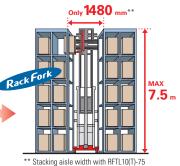
The Rack Fork Series handles loads from three directions by means of shift-and-rotate operation or with conventional forward loading and unloading. No turning of the truck is required.



#### 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 FBH15-75 (1100×1100 mm pallet)

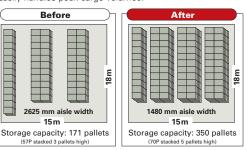
(1100 × 1200 mm pallet)

#### Advantages



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

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



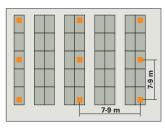
#### **CASE 3** Even warehouses with many pillars can be redesigned for minimal loss of space.

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.



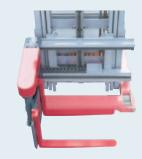
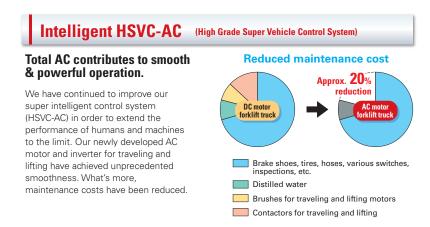


Photo: RFTL10-75 with optional mast-mounted



#### **Enhanced Basic Operability**

#### Traveling speed 10.0 km/h

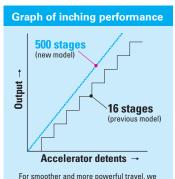
(Model RFTL10-75, unladen)

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

150%

# 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 Nichivu's test cours

\* Models RFTL(A)10/12/15-75





Nichivu's actual measurement of shift and

rotate function with 1.0-ton model (unladen)

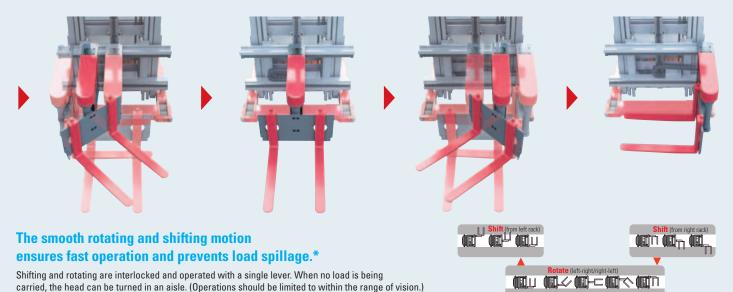


Rack Fork

Operability

Previous model

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



#### 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.)

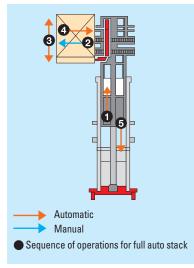
#### With optional Simple Semi-auto Stack Device Jr. T



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

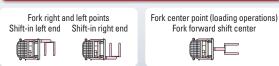
with confidence (Smooth operation with stageless control) Smooth operation is possible thanks to the stageless control of the electric turret head. This greatly reduces shaking of the mast at higher lift heights. The result is safer and more accurate operation.



#### 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.



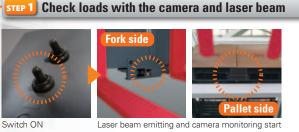
#### Fork view monitor

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

#### Fork view monitor (Optional)

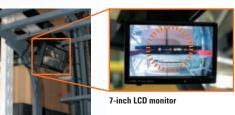
This system captures the pallet emitted by laser beam with a small camera and displays it on a screen.





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

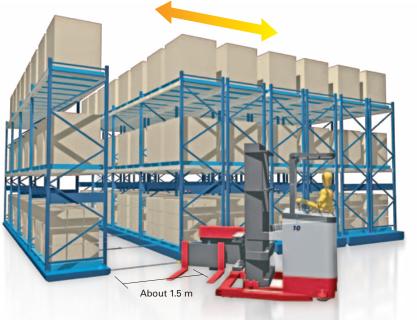
The pallet-insertion point is displayed on the monitor via the camera mounted to the base of the fork.



# 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.

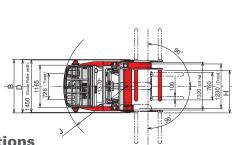


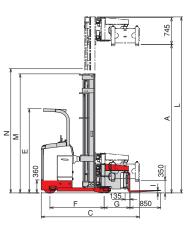
Multiple trucks speed up job completion times.



Combine the "Pallet Picker" to handle case picking.







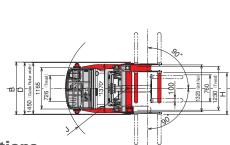
#### **Rack Fork Junior Specifications**

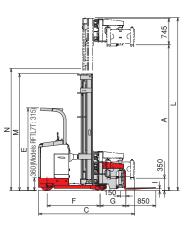
				Unit	RFTL10-75	RFTL12-75	RFTL15-75	RFTLA10-75	RFTLA12-75	RFTLA15-75					
	Capacity			kg	1000	1200	1500	1000	1200	1500					
	Load dimensions	(L x W)		mm		1100×1200									
	Load center			mm			5	50							
	Lift height			mm		A 6500 7500									
	Lift height (Maxi		mm		6500										
Performance	Lifting speed	Laden		mm/s	340	310	270	330	280	270					
L m		Unladen		mm/s	370 350		310	370	3	10					
erfo	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 w	В	mm	1480	15	80	1480	1580							
	Overall length		С	mm	2725	2745	2895	2895							
	Overall width (with across guide rollers)		D	mm	1450	1450 1550		1450	1550						
	Overhead guard height E mm				2330										
Dimensions	Fork length			mm	850										
lens	Wheelbase		F	mm	15	00	1650		1621						
Dim	Front overhang		G	mm	715	740	760	765	769	789					
	Shift stroke		Н	mm	1175	1270	1200	1175	1270	1200					
		Lowered fork height			60 (to bottom of fork)										
	Minimum turning	g radius	J	mm	17	1880									
s	Drive			mm	<i>∲</i> 380*165 Rubber										
Tyres	Load			mm	$\phi$ 127*92 Urethane		Urethane	$\phi$ 127*92 Urethane							
	Casters			mm		φ 204*76 Rubber									
		Travel		kW				5							
		Control method						erter							
trol	Motors	Hydraulic		kW				11							
Control		Control method						erter							
Ŭ		Steering		kW				0.3							
		Control method						nopper							
	Shift & Rotate dr						Electric / F	ET chopper							
∑.	Battery capacity			Ah/5HR	32	-		37							
Battery	Charger	Туре			Built-in 4.3 kVA / S	Stationary 4.7 kVA		Built-in 5.2 kVA / S	Stationary 6.5 kVA						
	Recharging syste	m					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 (inni)	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	м	RFTL12	2295	2545	2795	3045	3295	3545	3795	4045	-	-
(mast lowered) (mm)		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 height		RFTLA10	2440	2690	2940	3190	3440	3690	3940	4190	4440	4690
during traveling	N	RFTL12	2440	2690	2940	3190	3440	3690	3940	4190	-	-
(at 350 mm lift) (mm)	11	RFTLA12	2440	2690	2940	3190	3440	3690	3940	4190	4440	4690
		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
Capacity (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
Sarvisa weight //	~l	RFTL12	3740	3790	3930	4030	4070	4120	4180	4260	-	-
Service weight (k	9)	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	Load dimensions (L x W)				1100×1100								
	Load center r			mm	550									
	Lift height		Α	mm		Δ								
e	Lift height (Maxi		mm		60	00								
Performance	Lifting speed	Laden		mm/s	360	340	300	270						
form		Unladen		mm/s	430	410	350	310						
Perl	Traveling speed		km/h	9	.5	9	8							
		Unladen		km/h	1	0	9.5	8.5						
	Rotating speed o	f forks		s/180°	8	9	10	11						
	Shift speed			mm/s	24	40	230	210						
	Main aisle width	(calculated)		mm	2880	30	30	3250						
	Stacking aisle w	dth	В	mm	14	80	15	1580						
	Overall length		С	mm	2560	2725	2745	2895						
	Overall width (wit	h across guide rollers)	D	mm	14	0		1550						
	Overhead guard height E mm			mm	2255 2330									
ons	Fork length mm			mm	850									
Dimensions	Wheelbase	F	mm	1348	15	00	1650							
Ĕ	Front overhang	G	mm	715	730	750	785							
_	Shift stroke	Н	mm	1210	1180	1280	1210							
	Lowered fork hei	1	mm											
	Minimum turning	g radius	J	mm	1585	17	1910							
s	Drive			mm	φ 330*145 Rubber									
Tyres	Load	ad		mm	φ 127*92			27 Urethane						
	Casters			mm			φ204*76 Rubber							
		Travel		kW	4.3		5							
		Control method				Inve	verter							
lo	Motors	Hydraulic		kW	8.8		11							
Control	WIDTOTS	Control method				Inve	rter							
5		Steering		kW		0.	-							
	Control method					FET ch	opper							
	Shift & Rotate dr					Hydr	aulic							
≥	Battery capacity	48 V		Ah/5HR	210	28	0	320						
Battery	Charger	Туре			Built-in 3.0 kVA / Stationary 3.8 kVA	Bui	lt-in 4.3 kVA / Stationary 4.7 k	VA						
ä	Recharging syste	m				Ye	es							

Lift height (mm)		Model	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
	) L M N	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	-	-	-
		RFTL15T	4015	4515	5015	5515	6015	6515	7015	-	-	-
		RFTL7T	2195	2445	2695	2945	3195	3345	3695	-	-	-
Height of mast	5.4	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	-	-	-
Mast height during traveling	N	RFTL10T	2440	2690	2940	3190	3440	3690	3940	-	-	-
(at 350 mm lift) (mm)	IN	RFTL12T	2440	2690	2940	3190	3440	3690	3940	-	-	-
		RFTL15T	2690	2940	3190	3440	3690	3940	4190	-	-	-
		RFTL7T	700	700	700	630	580	530	500	-	-	-
Conneity (lun)		RFTL10T	1000	1000	1000	1000	1000	870	800	-	-	-
Capacity (kg)		RFTL12T	1200	1200	1200	1170	1070	1000	950	-	-	-
			1500	1500	1450	1330	1230	1070	970	-	-	-
		RFTL7T	2660	2700	2880	2930	2970	3020	3060	-	-	-
Comico mainho (le		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).

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 a singmed to rack edge) = Stacking aisle width - 340
 Width of upper guide roller (when cargo a verhangs rack) = Stacking aisle width + 20
 Width of lower guide roller = Stacking aisle width - 330
 Clearance is not included in the main aisle 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

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

#### Cold Storage Specification Suitable for working both outdoors and inside refrigerated

warehouses down to -35C.

Suitable for material handling operations in severely dusty environments.

#### **Specifications and Equipment**

	lte	m	RFTL10	RFTL12	RFTL15	RFTLA10	RFTLA12	RFTLA15	RFTL7T	RFTL10T	RFTL12T	RFTL15T
	Traveling AC control											
	Hydraulic AC control		0	0	0		0	0	0	0	0	0
Control	Shift & rotate drive method	Electric	0	0	0		0	0	0	U	0	<u> </u>
Con	Shint & rotate unive method	Hydraulic		0	0		0	0	0	0	0	0
	Smooth interlocking	пушаши	0	0	0	0	0	0	0	0	0	
12	L (maximum) mm		1400	0		1400	0	1300		1400		
Load imension	W (maximum) mm			1400			1600		1300		1500	
	Soft landing		0	0	0	0	0	0	0	0	0	0
	Soft changing (available for t	0	0	0	0	0	0	0	0	0	0	
	Soft ending	inee-stage masts only	Δ							$\triangle$	Δ	
ses	Neutral safety		0	0	0	0	0	0	0	0	0	0
Safety Devices	Safety cruise		0	0	0		0	0	0	0	0	0
ety [	Auto torque increase		0	0	0		0	0	0	0	0	0
Safi	Auto power off		0	0	0	0	0	0	0	0	0	0
	Shift & rotate stageless char	ngeover	0	0	0		0	0			0	
	Various traveling interlocks	1900101	0	0	0	0	0	0				
e)	Coasting*		0	0	0		0	0	0	0	0	0
ol	Plugging		0	0	0		0	0	0	0	0	0
Conti	Braking		0	0	0		0	0	0	0	0	0
Regenerative Control	Speed suppression when de	seending clopes	0	0	0		0	0		0	0	0
	Simple semi auto stack (stan		0	0	0		0				Δ	
~	Simple semi auto stack (AB switch,		Δ		$\triangle$							
Stac					Δ							
Auto Stack	-	Semi auto stack with inching (AB switch, 9 stages each)										
A	Full auto stack (AB switch, 9 stages each)		$\triangle$									
2		Full auto stack with sensor (AB switch, 9 stages each)								0		0
Guide Roller	Lower guide rollers	4 pcs.	0 		Δ				0	0	0	
uide	Upper guide rollers	Standard for lift heights exceeding 6000 mm	Δ							$\triangle$	$\triangle$	
	Modification of guide roller v	Δ							$\triangle$	Δ		
ig Aic	Lift stop position mark	Travel stop position mark								$\triangle$	Δ	
Handling Aids	Address pointer									$\triangle$	Δ	
Ť	VFD (vacuum fluorescent dis	nlavi	0								0	0
~	Safety monitor	piay)	0	0	0		0	0		0	0	0
splay	Text warning		0	0	0		0	0	0	0	0	0
I Dis	Multi-hour meter		0	0	0	0	0	0		0	0	0
Multifunctional Display	Odometer		0	0	0		0	0	0	0	0	0
unct	Clock with calendar				0		0	0	0	0	0	0
lultif	Battery discharge indicator		0	0	0		0	0	0	0	0	0
2	Speed meter		0	0	0		0	0	0	0	0	0
5	Reserve charge		0	0	0	0	0	0	0	0	0	0
Built-in Charger	Charging status monitor	0	0	0	0	0	0	0	0	0	0	
in Ch	Charge time extention for lov	v temperature	0	0	0		0	0	0	0	0	0
uilt-i	Supplemental thermal charge	0	0	0		0	0		0	0	0	
	Capacity						-	BV				
	201 Ah/5HR											
ies	210 Ah/5HR								0			
Batteries	280 Ah/5HR								Δ	0	0	
B	320 Ah/5HR		0	0								0
	370 Ah/5HR		Δ		0	0	0	0		$\triangle$		
							0		I			

△ 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.