



Radio Shuttle



TTF Marketing Holdings Sdn. Bhd.

199601035401 (407754-H)

Table of Content

I . Brief Introduction	2
II . Shuttle Rack advantages	3
. Brief Introduction	4
1、 classifications	5
2、 Structure composition	8
3、 Standard operation	8
4、 Outline dimensions and weight	9
5、 Productio advantages	10
1) More higher technical capacity	10
2) More higher compatibility and stability	10
3) More Intelligence	11
4) More higher safety	11
6、 Radio shuttle affiliated equipments	12
1) Rescue equipment	12
2) Charging cabinet	13
3) Auxiliary placement system	13
4) Auxiliary rescue system	13
7、 WMS and WCS introduction	14
☒ . Production qualification	16
V After-sales service	23
VI . Project Cases	24

I. Brief Introduction

TTF MARKETING HOLDINGS SDN. BHD. 199601053540 (407754-H) is a leading Racking Systems and Office Systems pioneer in Malaysia. In order to achieve world class standard of quality, we heavily invest into modern machineries and latest sophisticated technology.

Our full range product such as Light Duty Racking Systems, Medium Duty Racking Systems, Heavy Duty Racking Systems, Steel Platform, Mezzanine Floor, Selective Pallet Racking, Automated Storage & Retrieval System, Gondola Shelving and Office Systems to all the market segment such as industrial, warehouse, office, retail, hypermarket and residential use. With our dynamic strength and full coordination, TTF GROUP also introduce another added products named KOMADA Material Handling Equipment, SAFER Stainless Steel Convex Mirror, IRON MAN Pallet Mesh, SHUTER MAN Aluminium Ladder and FiTO Office Systems.

Our quality standard awarded ISO 9001 authentication certificate. We are confident that with our expertise, latest technology, research and development, we can fulfil our customer needs and requirement to continually improve the effectiveness of Quality Management Systems.

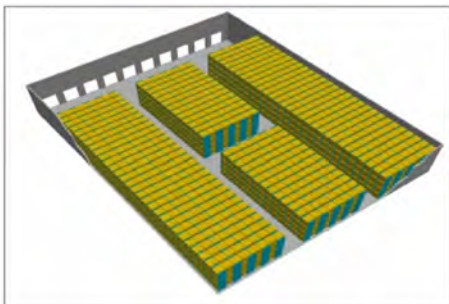
II.Shuttle Rack advantages

For the original drive-in rack, many forklift work channels must be reserved for forklift to place cargo onto rack by directly entering warehouse area. This mode has a big disadvantage, i.e. wasting time and energy, which seriously affects the management efficiency in the warehouse. Now it is changed to shuttle rack, in which forklift only works in front end of warehouse, and cargo is transported to the designated location through radio shuttle. What radio shuttle transfers between various channels is completed by forklift. This program largely improves work efficiency, which has achieved results of swift and safety Advantage details are as follows :

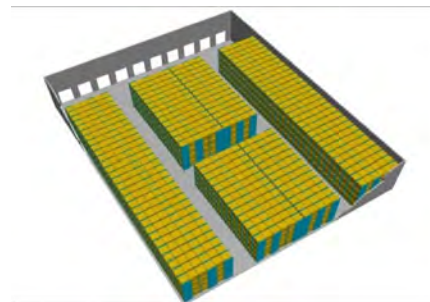
- 1、 Forklift is unnecessary for entering aisle, which can save operating time and improve security of both personnel and cargo.
2. Warehouse space is fully utilized so that availability in warehouse can be more than 80%.
3. Different kinds of products can be flexibly accessed in rails
4. Structural stability makes higher safety factor in comparison with drive-in rack
5. First-in-first-out (FIFO) and first-in-last-out (FILO) can be realized ;
6. Be suitable for cargo with more quantity and less variety, such as food, beverage, chemical, medicine and tobacco industries with single variety and more batches, especially in cold storage environment

i.e. Contrast figures of warehouse system:

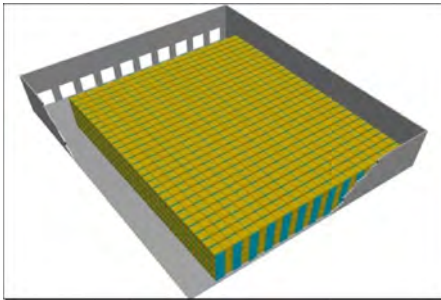
: (2600pallets)



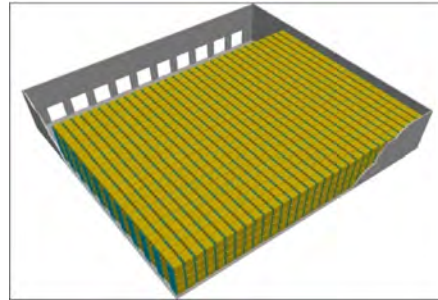
Drive-in rack with 9 deep locations



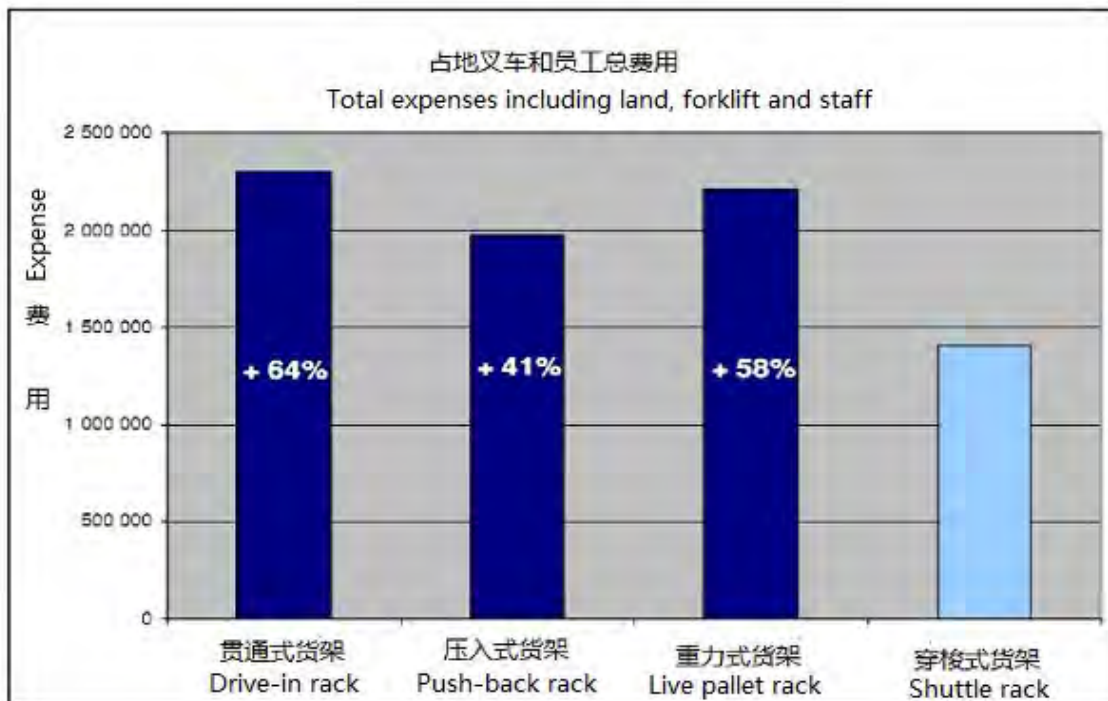
Push-back rack with 5-6 deep locations



Pallet flow rack with 25 deep locations






Shuttle rack with 22 deep locations







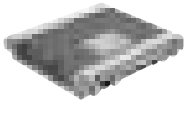
Total expenses: Land, fork and staff figure

The above comparison clearly shows that shuttle rack has absolute advantage in whole expenses! Therefore it is also future selection for customer!

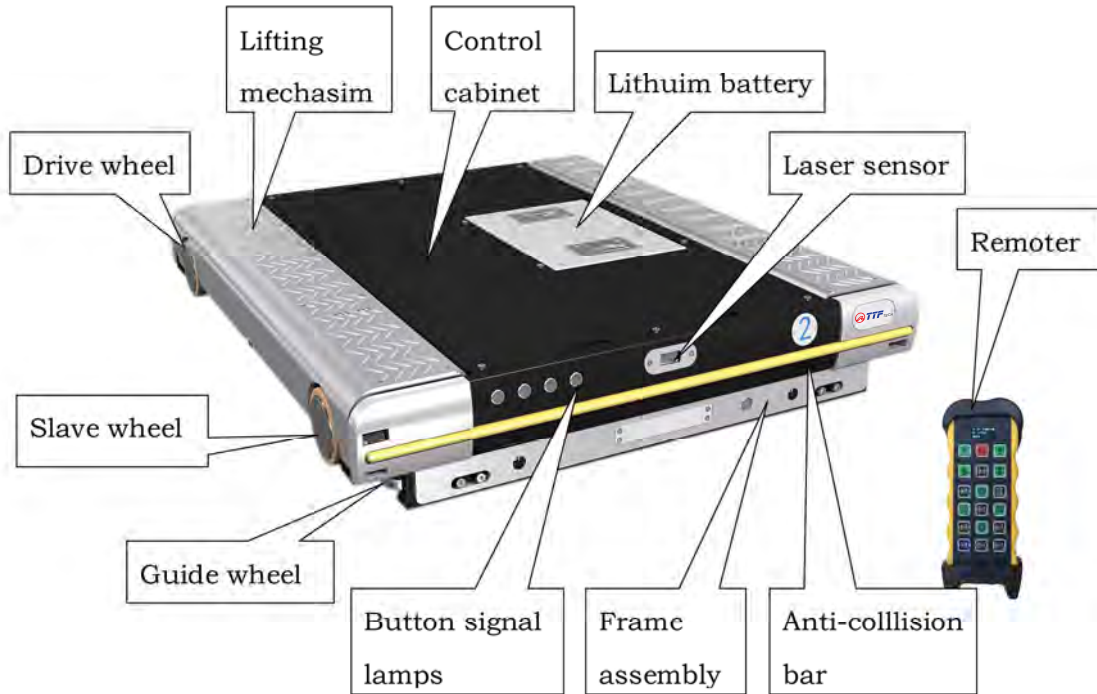
.Brief Introduction

parameters		Economic type	Standard type	Advanced type
Outline				
Loading capacity max.		Max 1500kg	Max 1500kg	Max 1500kg
move	Running speed	Vmax_empty : 1.0m/s Vmax_full : 0.8m/s	Vmax_empty : 1.0m/s Vmax_full : 0.8m/s	Vmax_empty : 1.5m/s Vmax_full : 1.0m/s
	Drive motor	Domestic brush servo motor 48VDC 600W	Domestic brushless servo motor 48VDC 600W	Imported brushless servo motor 48VDC 600W
	Servo driver	Domestic customized servo driver	Domestic customized servo driver	Imported brushless servo driver
lift	Lift motor	Imported motor 48VDC 500W	Imported motor 48VDC 500W	Imported motor 48VDC 500W
	Lift height	≤ 45mm	≤ 45mm	≤ 45mm
Move positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Pallet positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Lift control : proximity switch		Germany P+F	Germany P+F	Germany P+F
Object detection : photosensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Control system		Siemens S7-200 PLC	Siemens S7-200 PLC	Siemens S7-200 PLC
Remoter : two-way		Customized IMT	Customized IMT	Customized IMT
Power supply		Lithium battery	Lithium battery	Lithium battery
Battery capacity		48V , 30AH	48V , 30AH	48V , 30AH
Running time		≥ 8h	≥ 8h	≥ 8h
Charging time		3~4H	3~4H	3~4H
Battery lifetime		Charge times ≤ 1000	Charge times ≤ 1000	Charge times ≤ 1000
Operation mode		Remote control	Remote control	Remote control
Running noise		≤ 60db	≤ 60db	≤ 60db
Painting color		frame (black) others (light gray)	frame (black) others (light gray)	frame (red) others (light gray)
Ambient temperature		Temp : 0 ~ 50 Humidity : 5% ~ 95%	Temp : 0 ~ 50 Humidity : 5% ~ 95%	Temp : 0 ~ 50 Humidity : 5% ~ 95%

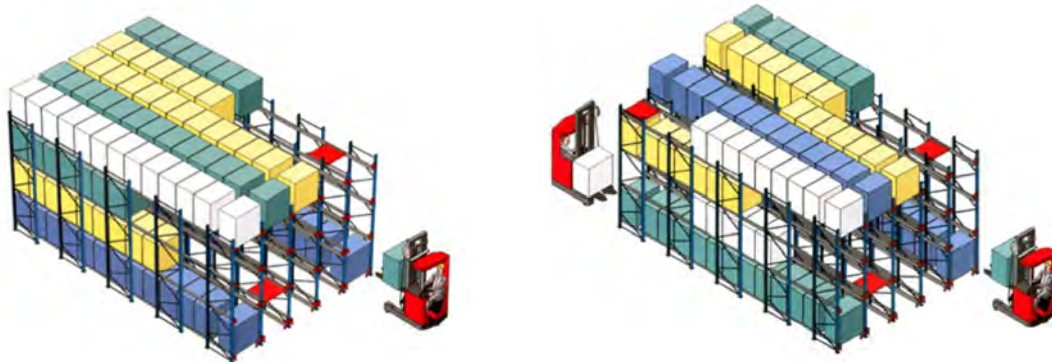
Parameter		Heavy load type	Low temperature type	Wifi type
Outline				
Maximum payload		Max 2000kg	Max 1500kg	Max 1500kg
Move	Running speed	Vmax_empty : 0.8m/s Vmax_full : 0.6m/s	Vmax_empty : 1.0m/s Vmax_full : 0.8m/s	Vmax_empty : 1.5m/s Vmax_full : 1.0m/s
	Drive motor	Domestic brush motor 48VDC 800W	Imported brush servo motor 48VDC 600W	Imported brushless servo motor 48VDC 600W
	Servo driver	Domestic customized servo driver	Domestic customized servo driver	Imported brushless servo driver
Lift	Lift motor	Domestic motor 48VDC 540W	Imported motor 48VDC 500W	Imported motor 48VDC 500W
	Lift height	≤ 45mm	≤ 45mm	≤ 45mm
Move positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Pallet positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Lift control : proximity switch		Germany P+F	Germany P+F	Germany P+F
Object detection : photosensor		Germany P+F/SICK	Germany P+F/SICK	Germany P+F/SICK
Control system		Siemens S7-200 PLC	Siemens S7-1200 PLC	Siemens S7-1200 PLC
remoter : two way		Customized IMT	Customized IMT	Customized IMT
Power supply		Lithium battery	Lithium battery	Lithium battery
Battery parametre		48V , 40AH	48V , 40AH	48V , 30AH
Run time		≥ 8h	≥ 8h	≥ 8h
Charging time		3~4H	3~4H	3~4H
Battery lifetime		Charge times ≤ 1000	Charge times ≤ 1000	Charge times ≤ 1000
Operation mode		Remote control	Remote control	WCS dispatch/ Remote control
Running noise		≤ 60db	≤ 60db	≤ 60db
Painting		frame (black) others (light gray)	frame (black) others (light gray)	frame (red) others (light gray)
Ambient temperature		Temp : 0 ~ 50 Humidity : 5% ~ 95%	Temp : -25 ~ 50 Humidity : 5% ~ 95%	Temp : 0 ~ 50 Humidity : 5% ~ 95%

Parameter		Stacker type	M/S type
Outline			
Maximum loading		Max 1500kg	Max 1500kg
Move	Running speed	Vmax_empty : 1.5m/s Vmax_full : 1.0m/s	Vmax_empty : 1.0m/s Vmax_full : 0.8m/s
	Drive motor	Imported brushless Servo motor 48VDC 600W	Imported brushless Servo motor 48VDC 600W
	Servo driver	Imported brushless servo driver	Imported brushless servo driver
Lift	Lift motor	Imported motor 48VDC 500W	Imported motor 48VDC 500W
	Lift height	≤ 45mm	≤ 45mm
Move positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK
Pallet positioning : Laser sensor		Germany P+F/SICK	Germany P+F/SICK
Lift control : proximity switch		Germany P+F	Germany P+F
Object detection : photosensor		Germany P+F/SICK	Germany P+F/SICK
Control system		Siemens S7-1200 PLC	Siemens S7-1200 PLC
Remoter : spare		Spare domestic	Spare domestic
Power supply		Lithium battery	Lithium battery
Battery parametre		48V , 30AH	48V , 30AH
Run time		≥ 8h	≥ 8h
Charging time		3~4H	3~4H
Battery lifetime		Charge times ≤ 1000	Charge times ≤ 1000
Operation mode		WCS dispatch/ Remote control	WCS dispatch/ Remote control
Running noise		≤ 60db	≤ 60db
Painting		frame (red) others (light gray)	frame (black) others (light gray)
Ambient temperature		Temp : -25 ~ 50 Humidity : 5% ~ 95%	Temp : 0 ~ 50 Humidity : 5% ~ 95%

2、 Structure composition



3、 Standard operation



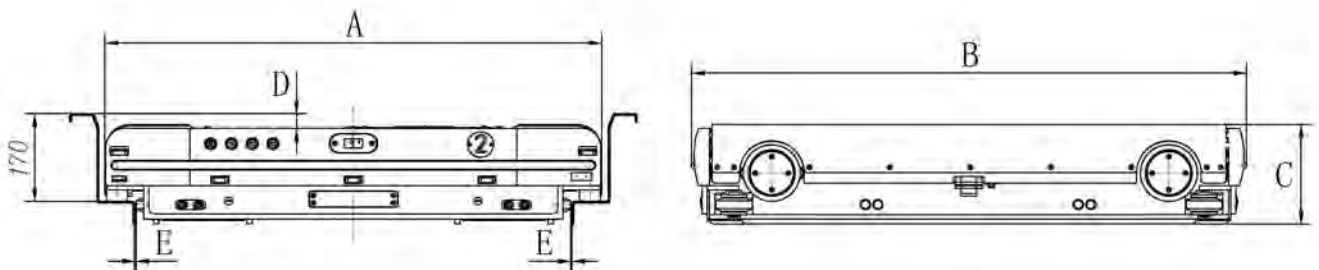
FILO

FIFO

- | | | | |
|----------------|--------------|------------------|--------------|
| (1) IN | (2) OUT | (3) CONT.IN | (4) CONT.OUT |
| (5) DESIG. OUT | (6) SHIFT | (7) DESIG. SHIFT | (8) COUNT |
| (9) IN COUNT | (10) RESTORE | (11) A/B | |

4、 Outline dimensions and weight

Model	Pallet sizes (mm)	Weight (kg)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
TDRII-1012	1000X1200	285	831	1270	193	27	3
TDRII-1113	1100X1300	295	873	1370	193	27	3
TDRII-1210	1200X1000	280	957	1070	193	27	3
TDRII-1211	1200X1100	290	957	1170	193	27	3
TDRII-1212	1200X1200	300	957	1270	193	27	3
TDRII-1213	1200X1300	310	957	1370	193	27	3
TDRII-1214	1200X1400	320	957	1470	193	27	3
TDRII-1215	1200X1500	335	957	1570	193	27	3
TDRII-1216	1200X1600	345	957	1670	193	27	3
TDRII-1311	1300X1100	300	1057	1170	193	27	3
TDRII-1410	1400X1000	310	1157	1070	193	27	3
TDRII-1411	1400X1100	320	1157	1170	193	27	3
TDRII-1412	1400X1200	330	1157	1270	193	27	3
TDRII-1414	1400X1400	355	1157	1470	193	27	3
TDRII-1415	1400X1500	365	1157	1570	193	27	3



Note :

1. Different dimensions of radio shuttle can be tailor-made as per various kinds of pallets and rails.
2. Pallet sizes , i.e. 1200X1000 (front number 1200 means fork-in direction /width direction, rear number 1000 means width direction)。

5、 Production advantages

1) More higher technical capacity

TDRII-A shuttle speed: V_{empty} 1.5m/s, V_{full} 1.0m/s. [Global lead](#)

TDRII-B shuttle carrying capacity : 1.5T ; [Global lead](#)

TDRII-T shuttle carrying capacity : 2T ; [Global lead](#)

Efficiency: about [1.5~2 times](#) faster than other counterparts.

Rapidity and stability: realize both rapidity and stability.

2) More higher compatibility and stability

Suitable for different warehouse: Normal temperature, low temperature, cool and corrosion warehouse;

Suitable for different pallets: Wooden pallet, plastic pallet, steel pallet, [thin edge pallet](#), dark pallet, [and incomplete pallet](#) etc.
[compatible with big and small pallets.](#)



Steel pallet



Wooden pallet



Plastic pallet

[System is anti-interference designed.](#) Detection signal adopts special detecting mode, and instantaneous interference signal is shielded ;

[Imported customized remote control](#) is adopted, which is stable and reliable and has far transmission distance, high IP class ;

German laser detection is adopted, which is not affected by environment and has accurate and reliable detection. ;

Lithium battery is safe and reliable and has long lifetime. ;

Japan bearing, joint bearing with military quality, high-grade screw and special mounting technology to ensure not loose for long time. ;

Guide wheel has locking mechanism, which does not need to be adjusted for three years ;

Each process considers all possibilities to ensure that order can be executed in any case.

3)More Intelligence

Intelligent in-stock design : Cargo on the in-stock end can be recognized within one meter no matter where cargo locates or what status shuttle is, And also can recognize the crush of cargo ;

Intelligent out-stock design: Out-stock has two modes, first when no cargo is detected on out-stock end the OUT can be executed, but in another mode out-stock is one by one successively. During out-stock, location can be automatically regulated if inaccurate pallet location is found. Cargo out-stock with designated quantity can be realized, and the quantity still can be kept in case of power failure;

Intelligent shifting-stock design: Two kinds of shifting-stock functions such as FIFO and FILO can be realized by remote control. When shifting-stock action is interrupted, one button to continue shifting-stock;

COUNT function: TDRII-B has COUNT function, which is real-time indicated by remote control. It is convenient to count up product quantity in each laneway and continuous count is supported.

Parameter standardization design: Various parameters are set up by remote control to match various applications so that such applications become more flexible.

More convenient operation: customized remote control, Chinese or English operation panel, status prompt and alarm prompt in English make operation simplified. ;

Swift maintenance: Operator can acquire status and alarm message of shuttle in English through remote control, and get trouble eliminating method by looking up maintenance manual or contact manufacturer for solution.

4)More higher safety

Self-inspection function of component: Once component has fault or damage, equipment can make self-inspection and send alarm prompt.

Collision protection: Equipment is equipped with obstacle avoidance sensor to timely send alarm for emergent stop in case of obstacle, which

can play a role of collision protection and shield the false alarm for forklift detected on the end of shuttle carrier ;

Light cargo falling prevention : Use hardware and software two kinds of protection to ensure the cargo not falling 。

Forced running function: Once dust affects laser detection, equipment can be moved to the end through forced running function, which does not need rescue vehicle. ;

All low temperature design: By means of low temperature resistance design with moisture proof function and without heating device, system can normally work under low temperature of -25 and reliability like normal temperature shuttle.

Feed protection function: When low battery, radio shuttle executes the current action, then return to HOME position for alarm. No more accept instructions ;

Laser is equipped with protective board: to avoid laser damage or angle deviation due to mis-operation by forklift operator. ;

6、 Radio shuttle affiliated equipments

1) Rescue equipment

Rescue vehicle of radio shuttle is an equipment to drag radio shuttle to cargo rack port when radio shuttle cannot move on rack due to trouble. Manual mode is adopted to make forward or backward with handle. Operating method is as follows: First of all, rescue vehicle is forked to radio shuttle rail by forklift, then operator moves rescue vehicle to the faulty radio shuttle.



Firstly switch off main power supply of radio shuttle, then connect radio shuttle with rescue vehicle by hook. Then move them to cargo rack port by manual handle. Remove hook, then fork out rescue vehicle and radio shuttle separately.

2)Charging cabinet

Charging cabinet, an equipment to charge battery of radio shuttle, has two charging positions. Charging position circuit is designed with independent power supply, which can charge two batteries simultaneously or charge one battery together. Charging will automatically stop when battery is fully charged. Charging cabinet has simple operation and convenient application.



3)Auxiliary placement system

When working on higher rack, forklift operator often drop off radio shuttle due to insufficient sight or less experience. In order to solve this problem, our company has developed a set of auxiliary placement system for radio shuttle, which can provide forklift with visual interface to prevent radio shuttle from dropping off by mis-operation.

4)Auxiliary rescue system

When radio shuttle rescued with rescue vehicle, radio shuttle with cargo is hardly dragged out if radio shuttle is in heavy duty. By means of this auxiliary system, pallet can be firstly placed on rail, then radio shuttle directly dragged out!

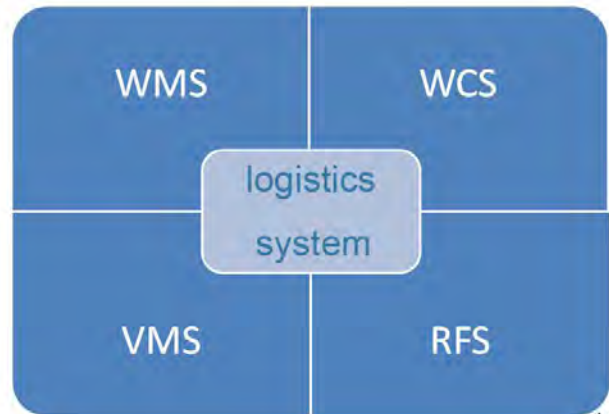


7、 WMS and WCS introduction

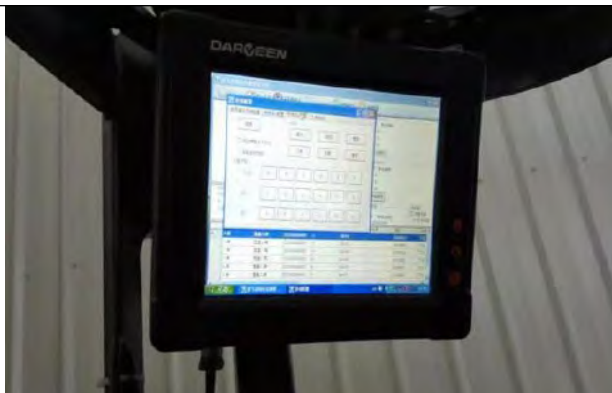
WMS is the acronym of Warehouse Management System. It is a management system for comprehensive use of batch management, material matching, inventory verification, quality control management, virtual warehouse management, JIT inventory management and other functions

through warehouse-in business, warehouse-out business, warehouse allocation, inventory movement, virtual warehouse management, and other functions so as to effectively control and track logistics of warehouse business and the whole process of cost management and to realize or improve corporate warehouse information management.

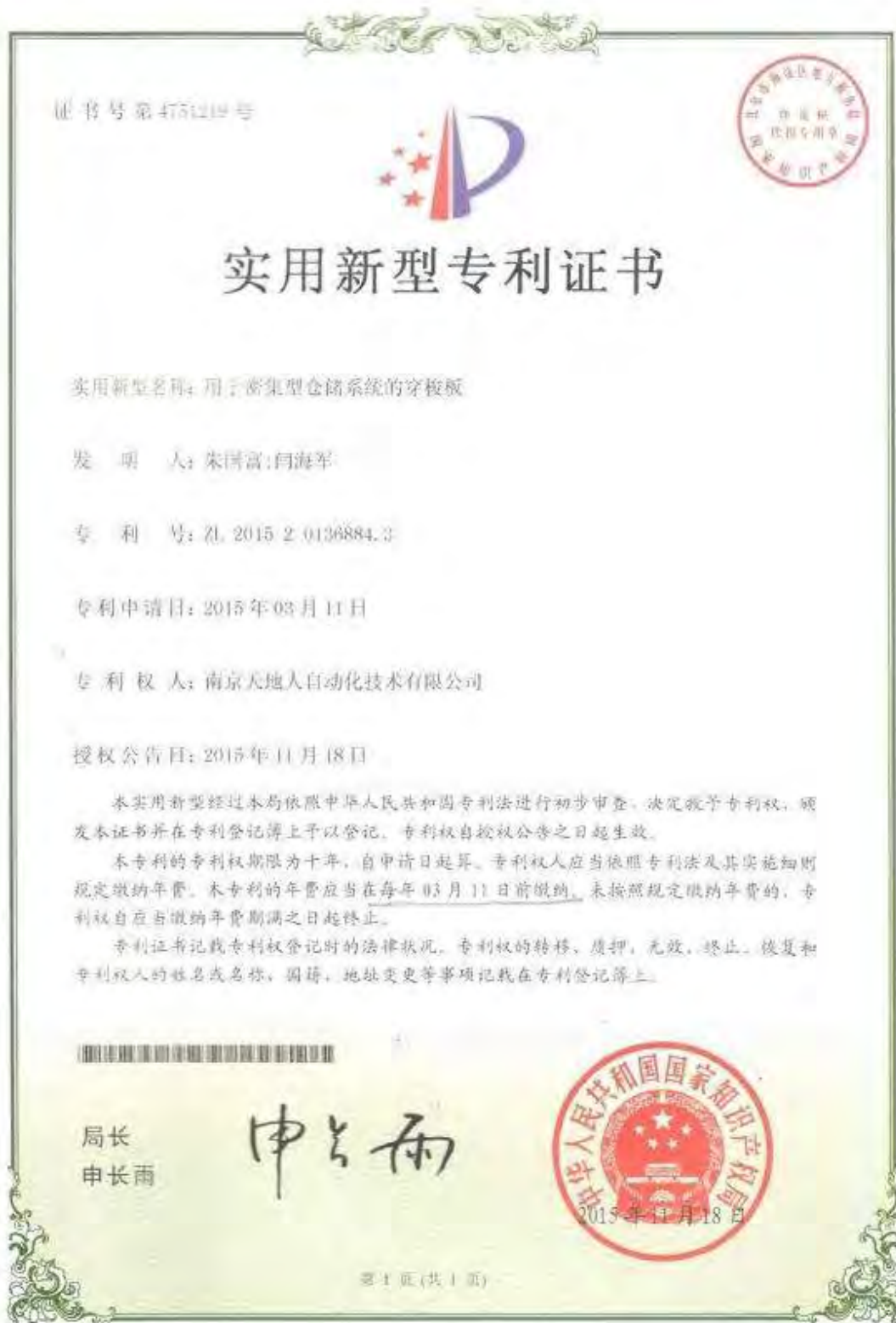
WCS which is the bridge between WMS and logistics equipment is responsible for coordinating and dispatching logistics equipment in bottom layer so as to enable logistics equipment in bottom layer to implement business process of warehouse system. Moreover, the whole process is executed according to preset process of the program.



WCS Software Dispatching Function			
1. WCS software can give a command of information scheduling and equipment operation.			
2. Equipment involved:			
Storage rack of stereoscopic warehouse	Stacker	Conveyor	Folding plate machine
Transition car	Shuttle machine	LED screer	Weighing equipmen
Bar-code scanner	...		
WMS Software Functions			
1. Integration and docking with ERP (SAP, Oracle, Yonyou, and Kingdee)			
2. Functional modules:			
Warehouse-in documen	Warehouse-out documen	Basic data (material, supplier, customer, and measuren unit)	
Command managemer	Empty tray managemer	Designated warehouse-out	Movement of stereoscopic warehouse
Warehouse managemer	Storage space managemer	User management	Initialization of storage
Printing of material bar code	Printing of tray bar code	Storage space dimension	Printing of storage space code
Record query	Inventory statistics	Monthly statement	Inventory check
Printing of warehouse-in documen	Printing of warehouse-in documen	Printing of warehouse-in document	Printing of warehouse-in document
...			
3. Functional modules:			
Equipment scheduling	Equipment monitoring	Command monitoring	State of storage space
...			

Vehicle-mounted VMS management system	Hand-held RFS management system of stereoscopic warehouse	
	1. Hand-held RFS system: mainstream banc in hand-held zebra logistics industry	
	2. Functional modules	
	Disc set managemen	Pick-up managemer
	Tray warehouse-in	Direct warehouse-ir
	Direct warehouse-out	...

.Production qualification
1.CE certificate





ISET S.r.l. Unipersonale

Sede Legale e Ufficio

Via Donatori di sangue, 9 - 46024 Mogli (MN)

Tel. e fax +39 (0)576 589463

www.i-set-italia.com - commerciale1@i-set-italia.com

Cap. soc. I.V.

€ 10.200,00

Cost. Fisc. e P.IVA Reg. Imprese

02 332 750 309

REA

02 332 750 309

Cap. soc. I.V.


MN 0221086

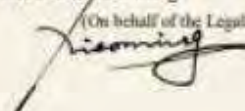
CERTIFICATE

Certificat - Certificado- Сертифікат - Zertifikat - 證書

- 1) **APPLICANT:** (who finally puts the product on the market)
Nanjing TDR Automation Technology Co., Ltd
No.1 Jiangyun road, Jiangning district, Nanjing, Jiangsu Province, China
- 2) **CERTIFICATE NO.:** ISETC.000620200526
TECHNICAL REFERENCE: TCF200519123MD-LVD
- 3) **ISET MARK:**



- 4) **CAUTION ABOUT CE MARKING** (Instruction for the Applicant who puts the product on the EU market):
 The label of the CE Marking on the left side should be not less than 5mm height. CE Marking and EC Declaration of Conformity are duties for the manufacturer or its applicant who puts the product on the market. This one is responsible to start the CE marking and certification procedure as required by the legislation in force. Only for the products which are compulsorily included into specific Directives or Regulations will be necessary to appoint a Notified Body.
- 5) **TYPE OF PRODUCT:** Radio Shuttle
MODEL(S): TDR11-A, TDR11-B, TDR11-C, TDR11-T, TDR11-Z, TDR11-ZMC,
TDR11-ZHC, TDR11-AW, TDR11-BW, TDR11-AS, TDR11-BS, TDR11-CS,
- 6) **LIST OF DIRECTIVES / REGULATIONS / STANDARDS** (as declared by the manufacturer itself)
Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU
EN ISO 12100:2010, EN 60204-1:2018
- 7) **NOTE:** This document is not referred to any evaluation that could be considered as included in the scope of the activities covered by the standard BS EN ISO/IEC 17065:2012 or European Regulation 765/2008.
- 8) **REMARK:** Certificate is issued on voluntary application from the Client and it gives to the applicant the right to use and affix the ISET Mark on their products, even if it doesn't imply any assessment on the safety and compliance of the product. ISET declares that the only scope of the assessment is to verify the existence of the declaration issued by the manufacturer or an applicant under its own responsibilities.
- 9) **DATE OF ISSUE:** 26/05/2020 **EXPIRY DATE:** 25/05/2025
- 10) **SIGNATURE:** Xiao Ming

(On behalf of the Legal representative)






ISET S.r.l. Unipersonale

Sede Legale e Uffici

Via Oberdan di sanpao, 9 - 46024 Moglia (MN)

Tel. e fax +39 (0)376 588963

www.i-set-italia.com - commerciale1@i-set-italia.com

Cap. soc. I.v.

Cod. Fisc. e P.IVA Reg. Imprese

REA

Cap. soc. I.v.

€ 10.200,00

02 332 750 369

02 332 750 369

MN 0221060

CERTIFICATE

Certificat - Certificado - Сертификат - Zertifikat - 證書

- 1) APPLICANT:** (who finally puts the product on the market)
Nanjing TDR Automation Technology Co., Ltd
No.1 Jiangyun road, Jiangning district, Nanjing, Jiangsu Province, China

- 2) CERTIFICATE NO.:** ISETC.000720200526
TECHNICAL REFERENCE: TCF200519122R

- 3) ISET MARK:**



- 4) CAUTION ABOUT CE MARKING** (Instruction for the Applicant who puts the product on the EU market):



The label of the CE Marking on the left side should be not less than 5mm height. CE Marking and EC Declaration of Conformity are duties for the manufacturer or its applicant who puts the product on the market. This one is responsible to start the CE marking and certification procedure as required by the legislation in force. Only for the products which are compulsorily included into specific Directives or Regulations will be necessary to appoint a Notified Body.

- 5) TYPE OF PRODUCT:** Radio Shuttle

MODEL(S): TDR11-A, TDR11-B, TDR11-C, TDR11-T, TDR11-Z, TDR11-ZMC,
TDR11-ZHC, TDR11-AW, TDR11-BW, TDR11-AS, TDR11-BS, TDR11-CS

- 6) LIST OF DIRECTIVES / REGULATIONS / STANDARDS** (as declared by the manufacturer itself)

Restriction of Hazardous Substances Directive 2011/65/EU
IEC 62321-1:2013, IEC 62321-2:2013, IEC 62321-3-1:2013, IEC 62321-3-2:2013, IEC 62321-4:2013,
IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017

- 7) NOTE:** This document is not referred to any evaluation that could be considered as included in the scope of the activities covered by the standard BS EN ISO/IEC 17065:2012 or European Regulation 765/2008.

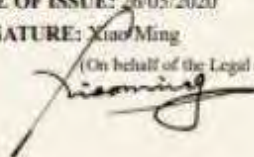
- 8) REMARK:** Certificate is issued on voluntary application from the Client and it gives to the applicant the right to use and affix the ISET Mark on their products, even if it doesn't imply any assessment on the safety and compliance of the product. ISET declares that the only scope of the assessment is to verify the existence of the declaration issued by the manufacturer or an applicant under its own responsibilities.

- 9) DATE OF ISSUE:** 26/05/2020

EXPIRY DATE: 25/05/2025

- 10) SIGNATURE:** Xiao Ming

(On behalf of the Legal representative)




2. Quality inspection report

南京市产品质量监督检验院
 Nanjing Institute of Supervision & Testing on Product Quality
检验报告
 Test Report

NZJ(2014)JX14449Z 共2页第2页 Page No:2-2

序号	检验项目	技术要求	单位	实测结果	单项评定
1	最大行驶速度	在空载条件下,最大行驶速度应 1.0 ± 0.05	m/s	1.01	合格
		在满载(1000 kg)条件下,最大 行驶速度应 0.8 ± 0.05	m/s	0.85	合格
2	承载能力	在常温、满载(1000 kg)条件 下,穿梭板连续存取货作业2 h,各机械部件不得出现变形、 裂纹、折断等影响使用的损坏, 电器元件不得出现失效、过热和 烧毁等电器损坏	—	符合要求	合格
3	倾斜试验	在用叉车搬运穿梭板时,货 叉倾斜 20° ,穿梭板不应出现滑 移或坠落	—	符合要求	合格
4	续行时间	在 $(20 \pm 2)^\circ\text{C}$ 温度条件下,将 穿梭板电池充满,穿梭板连续存 取货作业至锁电报警,续行时间 应能持续8 h	—	续行8h时,未锁电报警	合格





检验检测报告

Inspection and Detection Report

No. (2020)SJZDQ-WT0040

样品名称
Name of Sample

穿梭板

生产单位
Manufacturer

南京天地人自动化技术有限公司

委托单位
Consigner

南京天地人自动化技术有限公司

检验检测类别

委托检验

Inspection and Detection Kind



江苏省产品质量监督检验研究院

Jiangsu Product Quality Testing & Inspection Institute

江苏省产品质量监督检验研究院 检验检测报告

No.(2020)SJZDQ-WT0040

共 2 页 第 1 页

样品名称	穿梭板	规格型号	TDR II-A-1210	
生产日期\批号	—\—	商标	—	
委托单位名称\地址\电话\邮编		南京天地人自动化技术有限公司\南京市江宁区江云路1号\025-84900620, 13770839829\—		
生产单位名称\地址\电话\邮编		南京天地人自动化技术有限公司\南京市江宁区江云路1号\025-84900620, 13770839829\—		
受检单位名称\地址\电话\邮编		—\—\—		
检验检测类别	委托检验	任务来源/ 任务号	—	抽样单编号
样品数量	1台	抽样基数	—	样品编号
抽样日期	—	抽样人员	—	抽样地点
样品等级	—	各样量 及封存地点	—\—	封样状态
样品到达日期	2020-03-02	样品状态	符合检验检测要求	检查封样人员
检验检测日期	2020-3-11	检验检测地点	南京天地人自动化技术有限公司	
检验检测依据	《TDR II-A-1210型穿梭板试验技术要求》			
判定依据	—			
检验检测结论	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border-bottom: 1px solid black; width: 80%;"></div> <div style="text-align: right;"> 签发日期: 2020年3月11日  </div> </div>			
备 注	相关项目未取得资质认定, 仅作为科研、教学或内部质量控制之用。			

批准: 徐晓昂

徐晓昂

审核: 夏帆

夏帆

主检: 王健

王健

江苏省产品质量监督检验研究院 检验检测结果

No. (2020)SJZDQ-WT0040

共 2 页 第 2 页

序号	检验检测项目	单位	技术要求	检验检测结果	单项评价
				1#	
1	最大行驶速度	m/s	穿梭板在空载条件下,最大行驶速度应在 1.5 ± 0.1 范围内。 试验方法: (1) 测试设备:TDR11-A-1210穿梭板1台,1吨标准托盘1个,穿梭车测试货架(巷道式)1套。 (2) 空载速度测试:穿梭板从原点驶向远点,穿梭板行驶过程中匀速段的最大行驶速度。 满载速度测试:穿梭板顶起托盘,从原点驶向远点,穿梭板行驶过程中匀速段的最大行驶速度。 (3) 根据穿梭车的运行速度情况,轨道内穿梭板加减速段不作为测试区,仅以中间的3.0m左右作为测试区域,用钢卷尺测量,作出明显标记。 (4) 用秒表记录穿梭车通过测试区域的时间,重复10次。 (5) 以10次测试结果的最小值作为穿梭车通过测试区域的时间,计算出空载最大行驶速度。	1.5	—
			满载条件下,最大行驶速度应再 1.0 ± 0.1 范围内。 试验时,穿梭板满载1500kg,其它试验方法与空载条件最大行驶速度测试。	1.0	
2	承载试验	—	穿梭板在常温下,承载1500kg重物情况下正常运行2h,应无任何机械变形和元器件损坏。 试验方法: (1) 试验负载为总重量1500kg的重物(含托盘重量)1件,测试路径为一组6m长的货架。 (2) 在常温下,穿梭板承载1500kg的试验负载连续存取货作业,持续2h。 (3) 工作2h后,检查穿梭板机械部件是否有变形、裂纹、折断等损坏,电器元件是否有失效,过温和烧毁等电器损坏。	承载工作2h后,穿梭板机械部件无变形、裂纹、折断等损坏,电器元件无失效,过温和烧毁等电器损坏	—
3	续航测试	—	在 $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 温度条件下,在电池电量充满的条件下,穿梭板连续运行时间 $\geq 8\text{h}$ 。 试验方法: (1) 准备穿梭板1台(电池充满电),总重量为1500kg的测试负载(含托盘重量)1件,测试货架一组6m长。 (2) 在 $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 的环境温度条件下,通过PLC编写一套只有入库和出库的连贯动作程序,遥控器启动穿梭板运行,穿梭板一直重复执行入库和出库的指令,指令间隔3s。 (3) 穿梭板连续运行9小时,观察是否出现锁电报警。	穿梭板连续运行9h,无锁电报警	—
4	倾斜测试	—	将穿梭板放置在 20° 的倾斜面上,穿梭板保持稳定,不滑落。	穿梭板保持稳定,未滑落	—
备注					

以下空白

检验检测专用章

V After-sales service

“To provide the satisfied product and service for customer” is the business purpose of our company. While ensuring the advancement, reliability and stability of equipment, our company continuously improves service quality, such as after-sales delivery, commissioning, equipment maintenance, technical service and customer training etc., to satisfy customer through the best service.

- ① Equipment package shall meet the requirement of moisture-proof, rain-proof, rust-proof, corrosion-proof and shock-proof, and identification be clear and correct so that cargo can be delivered to site safely and timely.
- ② Engineering is in charge of the installing, commissioning, running and testing of equipment on site. After equipment is successfully debugged, supplier shall submit customer with testing results in written, and technicians of supplier can evacuate site at the consent of customer.
- ③ Our company takes in-process inspection system as one of the routine maintenance work, i.e. all running equipments are in-process inspected every half year. In-process inspection personnel consist of engineering technicians as well as designers. Problems and suggestions reflected by customer and maintenance men are considered to continuously improve the function and quality of software and hardware of product.
- ④ Warranty: The warranty of equipment under contract is 12 months after successful installation and commissioning. Expenses of part, component and traveling shall be borne by supplier within warranty (excluding natural disaster and man-made damage).
- ⑤ After received a fault telephone by customer, our technician can arrive at site for districts within Jiangsu, Zhejiang, Shanghai or Anhui provinces within 24 hours and at site for other districts within 48 hours to ensure that problems are solved within 24 hours. Professional engineer accepts telephone from customer at maintenance center of company for 24 hours to ensure that customer can timely get technical support during application of equipment.
- ⑥ Lifelong maintenance is provided for guaranteeing customer interests. After acceptance of equipment, integral part has one year warranty on the normal condition (excluding natural disaster and man-made damage). Beyond warranty, our company provides lifelong paid service.
- ⑦ Customer archives are established to improve product quality. Besides providing technical consulting service for customer, maintenance center of company also accepts and collects complaint and consultation information from customer to ensure that problems and requirements of customer can be timely solved and that solutions can be tracked and verified.
- ⑧ Spare part warehouse of company can swiftly provide spare parts for customer at the most favorable price.
- ⑨ We really appreciate your trust. Please keep us informed if you have any suggestion or requirement for our products. Regular maintenance shall be made in accordance with application manual and maintenance manual of various products of our company. Please keep our maintenance men informed in case of equipment fault to make swift troubleshooting.

VI. Project Cases

U.S.A Project



India Project



Coca-cola project



Japan Goo.N Diaper Project



Sinopec Project



Malaysia Project



LiaoNing Stacker Project (Fork type)



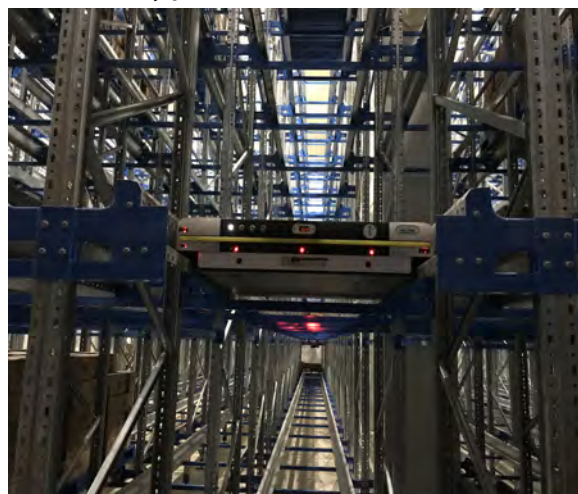
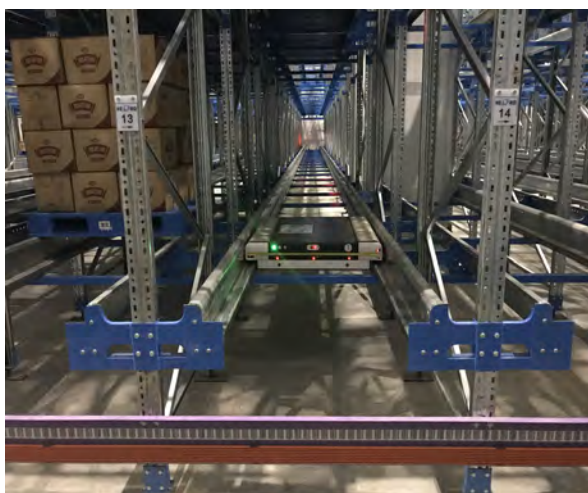
Xiamen Stacker Project (Chain type)



Henan Stacker Project (Super Lithium Capacitance)



Hunan Stacker Project (low temp. version fork type)



Tianjin Stacker Project (fork type)



FAW Automotive Project



C' estbon projec



Yili Group project



Arawana Grease Project



Pharmaceutical Glass Project



Eastroc Beverage



Gree Electric Appliances



Yihai Kerry



Cold Chain



Castrol



Oriental Yuhong



Sinopharm





TTF Marketing Holdings Sdn. Bhd. 199601035401 (407754-H)

Address : Lot 6, Jalan Perusahaan 1, Kawasan Perusahaan PKNS,
Batu 17, 48000 Rawang, Selangor Darul Ehsan, Malaysia.

Tel : +603 6091 8800

Fax : +603 6091 3300

website : www.ttf.com.my

E-mail : info@ttfgroup.com