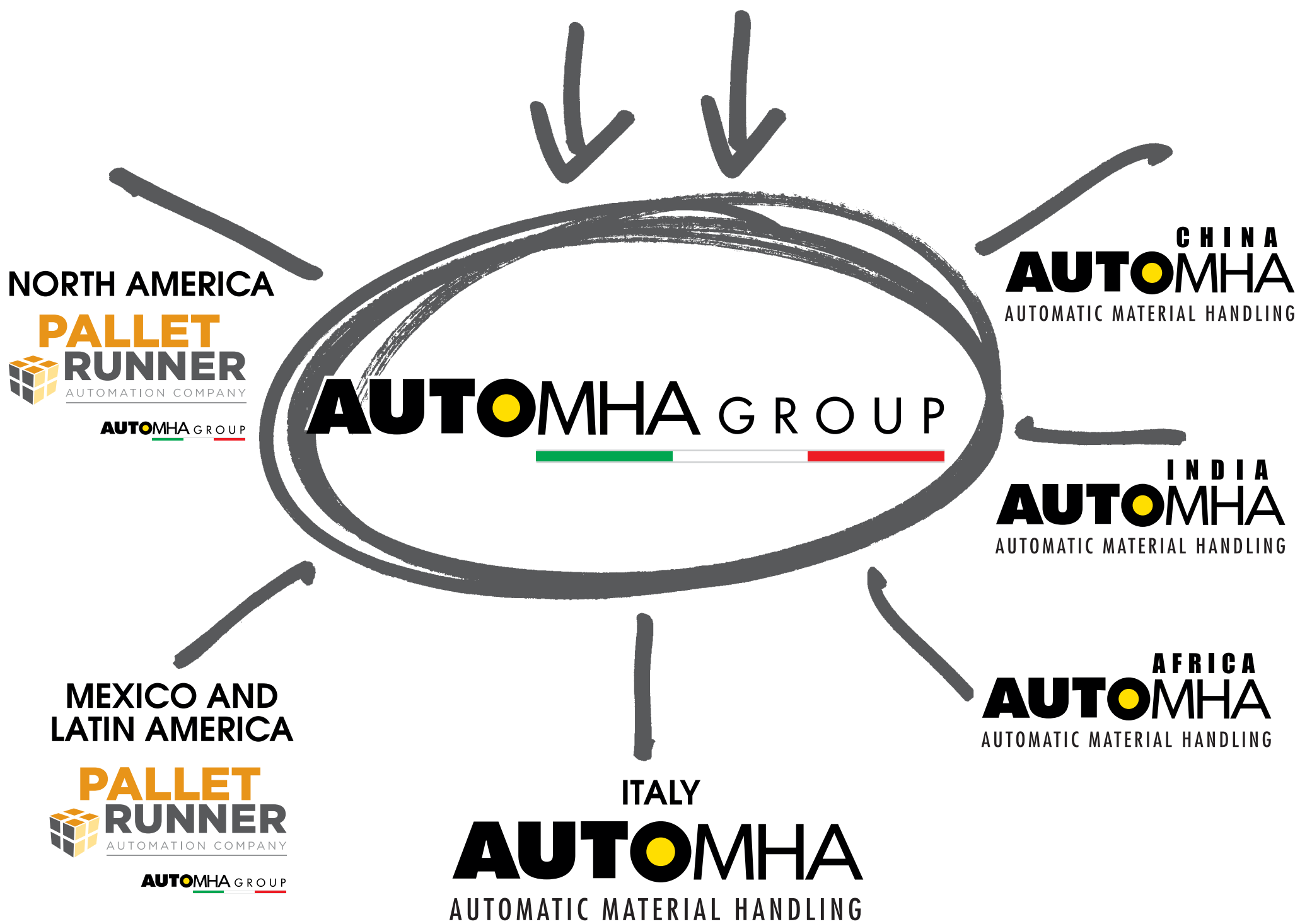


AUTOMHA[®]
AUTOMATIC MATERIAL HANDLING

Automation Made Simple

OUR GLOBAL NETWORK TO SUPPORT YOUR BUSINESS



WE MANUFACTURE
AUTOMATED
WAREHOUSES

ALWAYS HAVE ●

WE HAVE ALWAYS BEEN WORLD LEADERS IN SOLUTIONS AND SERVICES

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THE COMPANY

WE MANUFACTURE AUTOMATED WAREHOUSES. ALWAYS HAVE.

AUTOMHA HAS ALWAYS FOCUSED ITS ENERGY ON EVERY ASPECT OF INDUSTRIAL AUTOMATION, ESPECIALLY ON THE STORAGE AND INTENSIVE PICKING OF GOODS.

EVERY AUTOMATIC SYSTEM IS DESIGNED AND MANUFACTURED IN THE COMPANY BY OUR TECHNICIANS, FOR EVERY STAGE - MECHANICAL, ELECTRICAL AND SOFTWARE (WITH OUR AUTOWAREHOUSE MANAGEMENT SOFTWARE, AWM).

INSTALLATION AND TESTING ARE CRUCIAL FOR THE CORRECT OPERATION OF THE SYSTEM, IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS, THE BASE OF EVERY AUTOMHA INSTALLATION.

THANKS TO THE CONSIDERABLE EXPERIENCE GAINED THROUGH INSTALLATIONS AND INVESTMENTS IN THE RESEARCH OF NEW MACHINES, AUTOMHA IS SURELY A REFERENCE POINT FOR THE PRODUCTION OF AUTOMATED WAREHOUSES IN EVERY FIELD.

AUTOMHA IS QUALITY SYSTEM CERTIFIED UNI EN ISO 9001, OHSAS 18001 FOR HEALTH AND SAFETY AND UNI EN ISO 14001 FOR THE PROTECTION OF THE ENVIROMENT.



AUTOMHA GROUP

1979 YEAR OF FOUNDATION
115 EMPLOYEES
5 INTERNATIONAL OFFICES
2 PRODUCTION FACTORY
2 ASSEMBLY AREAS

VIDEO
ON WWW



DESIGN
ENGINEERING
PROJECT
PRODUCTION
INSTALLATION
COMMISSIONING
TESTING AND START-UP
TRAINING
MONITORING
SERVICE

EVERY STAGE
FROM DESIGN TO PRODUCTION
IS MANAGED DIRECTLY BY US

AUTOMHA
AUTOMATIC MATERIAL HANDLING

AUTOMHA'S KNOWLEDGE CONCERNS ALL MECHANICAL AND ELECTRICAL/ELECTRONICAL COMPONENTS, PLC SOFTWARE AND MANAGEMENT SOFTWARE.

AUTOMHA IS:

1

DESIGN

AUTOMHA FOLLOWS THE CUSTOMER FROM THE FIRST STAGE OF THE PROJECT, OFFERING THE BEST SOLUTION, THANKS TO THE HIGH TECHNOLOGY OF ITS MACHINES AND SURELY GUARANTEES INTERESTING INVESTMENTS.

2

ENGINEERING AND PROJECT

THE PRODUCTION OF A SYSTEM REQUIRES THE PREPARATION OF THE TECHNICAL SPECIFICATIONS WHICH DEFINE ALL THE MECHANICAL AND ELECTRICAL DETAILS, BUT MOSTLY THE AWM SOFTWARE INTERFACE WITH CUSTOMER MANAGEMENT (SAP, AS400, AND ALL OTHERS).

3

PRODUCTION

EVERY MACHINE, EVERY MECHANICAL AND ELECTRICAL COMPONENT, PLC SOFTWARE AND MANAGEMENT SOFTWARE OF AUTOMHA SYSTEMS ARE MANUFACTURED, ASSEMBLED AND TESTED IN THE COMPANY BY OUR QUALIFIED TECHNICIANS. THIS ALLOWS US TO OBTAIN A HIGH STANDARD CONTROL AND GUARANTEES TO THE FINAL USER MAXIMUM EFFICIENCY AND RELIABILITY.

4

INSTALLATION

AUTOMHA DIRECTLY FOLLOWS EACH INSTALLATION STEP BY STEP IN ANY PART OF THE WORLD. EVERY LOGISTIC DETAIL IS STRICTLY ANALYZED: FROM SHIPPING, WHICH IS ALWAYS ACCURATE, TO THE COORDINATION OF THE TECHNICIANS, WHO ALL BELONG TO OUR WELL-TRAINED AND EXPERT STAFF.

COMMISSIONING, TESTING AND START-UP

EACH AUTOMHA SYSTEM IS STRICTLY TESTED. ALL THE START-UP STAGES ARE FOLLOWED IN DETAIL AND THE VARIOUS OPERATIVE SITUATIONS ARE REPRODUCED METICULOUSLY.

TRAINING

DURING AND AFTER THE INSTALLATION OF A SYSTEM, AUTOMHA OFFERS THE USERS TRAINING COURSES. THE COMPANY SUPPLIES ALL THE EQUIPMENT NECESSARY TO LEARN ALL OF THE OPERATIVE FUNCTIONS DURING START-UP AND IT ORGANISES CUSTOMISED TUTORING SESSIONS. THANKS TO THE DETAILED TECHNICAL DOCUMENTATION GIVEN TO THE CUSTOMERS, AUTOMHA IS ABLE TO LET THE CUSTOMER BE INDEPENDENT IN EVERY STAGE OF SYSTEM MAINTENANCE.

MONITORING

AUTOMHA DOES NOT JUST INSTALL AND START-UP THE SYSTEM: THE MAINTENANCE DEPARTMENT ALSO PLANS SPECIFIC TUTORING, MAINTENANCE AND UP-GRADES, SO AS TO CONSTANTLY MONITOR THE EFFICIENCY AND SAFETY OF THE SYSTEMS SUPPLIED.

SERVICE

AUTOMHA CUSTOMER SERVICE IS ACTIVE 24/7, 365 DAYS A YEAR. A REMOTE MAINTENANCE CONNECTION ALLOWS DIRECT ACCESS TO THE FUNCTIONS OF THE WAREHOUSE AND IMMEDIATE REACTION. AUTOMHA IS ALSO ABLE TO GUARANTEE, IF NEEDED, ON-SITE SERVICE.

5.

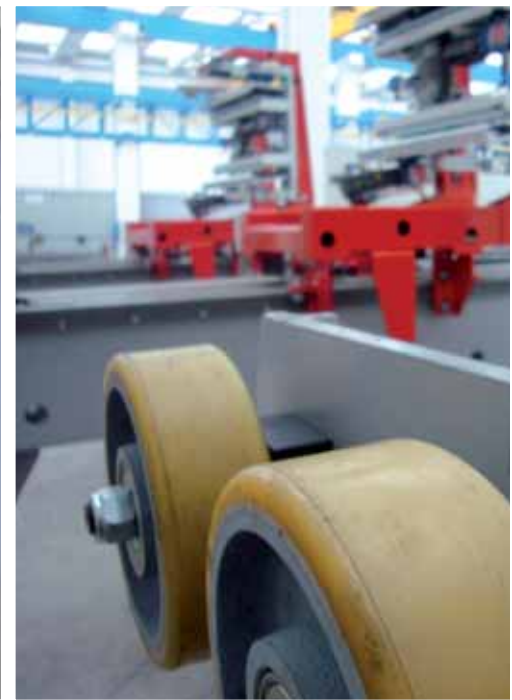
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7.

8.



WORK IN PROGRESS





- 1
- 2
- 3
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- 7
- 8

STORING AND PICKING SOLUTIONS

AUTOSAT

SEMI-AUTOMATIC MACHINE
BATTERY POWERED

18



FORK LIFT



AUTOSAT.WIFI

SEMI-AUTOMATIC MACHINE
BATTERY POWERED
WIFI COMMUNICATION

32



HAND SET



AGV



SUPERCAP

FULLY AUTOMATIC MACHINE
NO BATTERY
SUPERCAPACITOR TECHNOLOGY

36



AS/RS



AUTOSATMOVER



AUTOSATMOVER

FULLY AUTOMATIC SYSTEM
FOR HIGH DENSITY STORING

40



MASTERlift

FULLY AUTOMATIC SYSTEM
INNOVATION IN AUTOMATIC PICKING

48



BOOSTER

FULLY AUTOMATIC SYSTEM FOR COMPACT, MEDIUM-WEIGHT UNITS
HEAVY MINILOAD

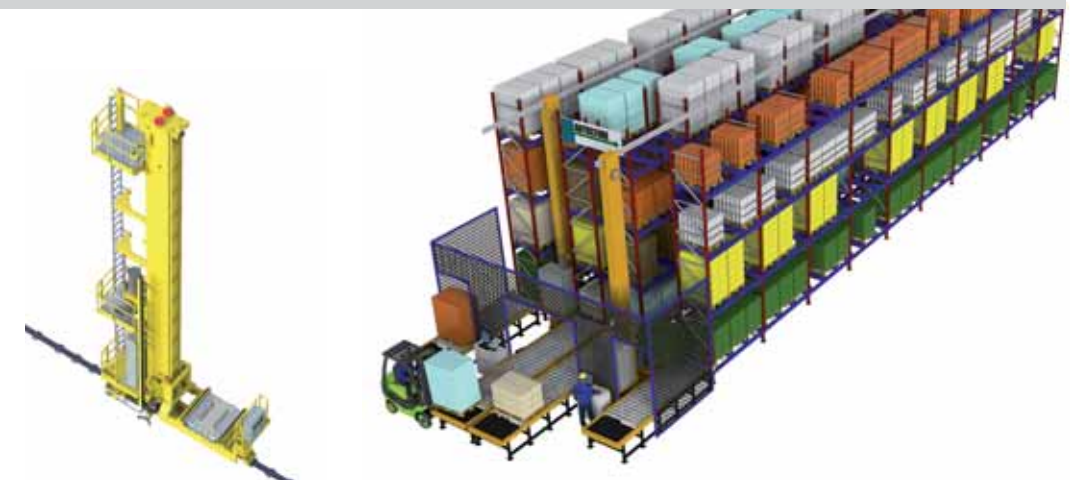
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AUTOSTORE

FULLY AUTOMATIC SYSTEM FOR STORING AS/RS AND SAT AS/RS

58



AUTOMHA
Nawm

WMS: WAREHOUSE MANAGEMENT SOFTWARE

66

BY AUTOMHA SOFTWARE TEAM

MATERIAL HANDLING

INTERNAL MOVING SYSTEMS, AGVS, ROBOTICS

68



● SEMI-AUTOMATIC MACHINE FOR HIGH-DENSITY PALLET STORING

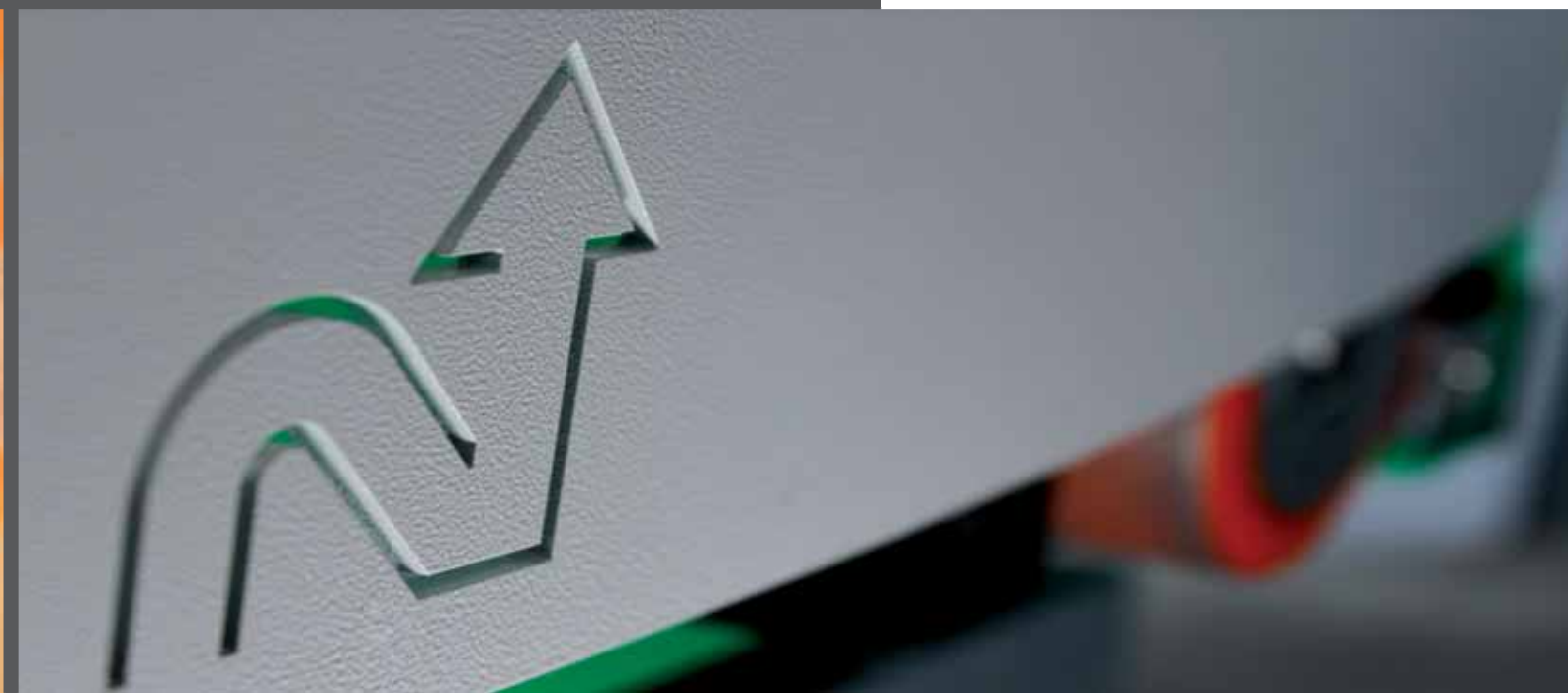


AUTOSAT® IS THE INNOVATION FOR THE AUTOMATIC STORING OF PALLETS IN A TRADITIONAL DRIVE-IN RACKING SYSTEM. IT IS PARTICULARLY EFFICIENT IN CASE OF REPEATED EMPTYING/FILLING OF THE SAME LANE (BUFFER AREAS MANAGEMENT).

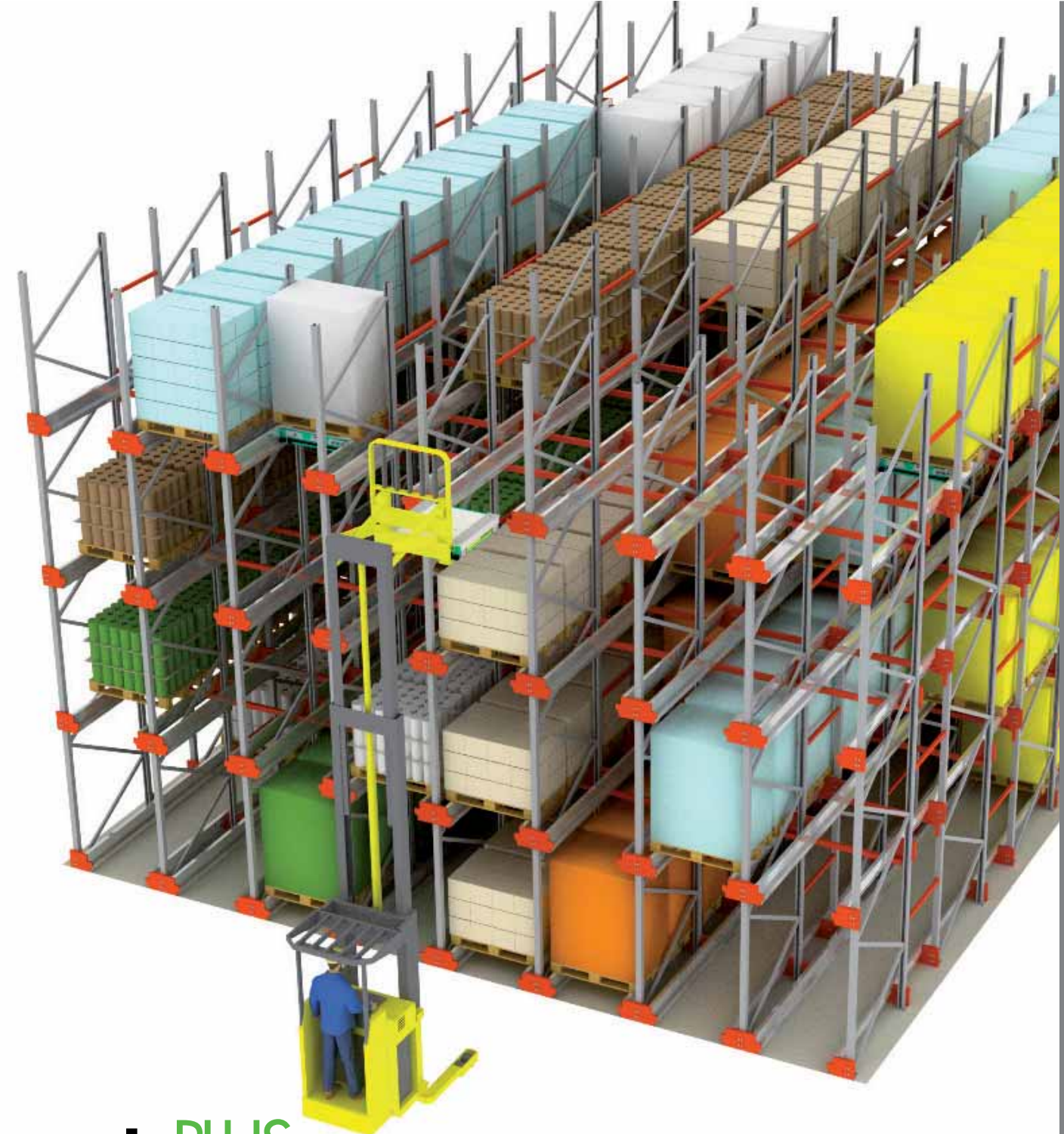
AUTOSAT® IS A MACHINE CAPABLE OF MOVING INDEPENDENTLY, THUS GUARANTEEING AUTOMATIC HIGH-DENSITY STORING AND THE MAXIMUM USE OF THE VOLUME OF THE WAREHOUSE. CONTROLLED BY A SIMPLE MULTIFUNCTION REMOTE CONTROLLER WITH LED DISPLAY AND MULTIPLE LANGUAGES, **AUTOSAT®** RETRIEVES, DEPOSITS AND RESHUFFLES THE PALLETS IN THE RACK STORING LANES AND, MOVED BY MEANS OF A TRADITIONAL FORK LIFT, IT CAN BE USED IN ALL THE LANES OF THE INSTALLATION, WITH THE OPERATION MODES FIFO (FIRST IN FIRST OUT) – LIFO (LAST IN FIRST OUT).

AUTOSAT® CAN BE USED IN FROZEN ENVIRONMENTS UP TO -30°C.

SAVE TIME, SAVE SPACE, SAVE MONEY!



CHARACTERISTICS



SYSTEM CONCEPT

- OPTIMISATION OF STORING, LOADING AND RETRIEVING
- OPTIMISATION OF SPACE
- PERFECT INTEGRATION WITH THE VARIOUS WAREHOUSE LOGICS: CASE PICKING - 80/20 – LIFO/FIFO
- EFFICIENT ORGANISATION OF THE WAREHOUSE
- MAXIMUM ADAPTABILITY TO EXISTENT DRIVE-IN STRUCTURES

SAFETY

- PALLET STORING/RETRIEVING WITHOUT DANGER OF COLLISIONS
- NO RISK OR STRESS FOR FORK LIFT OPERATORS
- DRASTIC REDUCTION OF DAMAGE TO THE LOAD UNITS AND TO THE STRUCTURE OF THE RACKS THANKS TO THE HANDLING IN FRONT OF THE WAREHOUSE
- STATE-OF-THE-ART SAFETY DEVICES

TECHNICAL ADVANTAGES

- POWERED BY A RECHARGEABLE LITHIUM BATTERY, SIMPLE AND FAST TO REPLACE
- FAST AND SILENT HANDLING
- EFFICIENT AUTO-LOCKING SYSTEM IN RAISED POSITION WITH ONBOARD LOADING
- VOLTAGE USED: 48V – FOR SMOOTHER MOVEMENTS AND LESS NOISE
- ANTI-CAPSIZE SYSTEM
- AISLE-END SLOWDOWN AND STOP WITH INNOVATIVE POSITIONING AND PATENTED LASER POINTER SYSTEM
- MACHINE OPERATION DATA AVAILABLE IN REAL-TIME ON THE REMOTE CONTROLLER
- NO MODIFICATIONS TO THE LIFTING SYSTEMS OF THE FORK LIFTS
- AUTOSAT IS EQUIPPED WITH GUIDING WHEELS WHICH FACILITATE INSERTION IN THE LANE

ADVANTAGES

- FAST AND EXTREMELY EASY TO USE
- GREEN TECHNOLOGY
- MODERN DESIGN
- 100% ITALIAN TECHNOLOGY
- 100% AUTOMHA SRL KNOW-HOW AND PRODUCTION

MAINTENANCE

- AUTOSERVICE: A PRACTICAL, CONVENIENT AND EFFICIENT MAINTENANCE PLATFORM
- MINIMUM MAINTENANCE
- GUARANTEED ASSISTANCE ALL OVER THE WORLD. TELESERVICE. SPARE PARTS AVAILABLE IN 24 HOURS

+ PLUS

- GREAT FLEXIBILITY THANKS TO THE MANAGEMENT OF ALL TYPES OF PALLETS, EVEN IN THE SAME LANE. DISTRIBUTION CENTRES, 3PL SYSTEMS AND THE DIFFERENT MARKETS PUSH US TO CREATE A MACHINE WHICH IS CAPABLE OF HANDLING DIFFERENT TYPES OF PALLETS AND CONTAINERS ACCORDING TO:
 - STRUCTURE
 - DIMENSIONS
 - SHAPE

EXAMPLES OF TYPES OF PALLETS HANDLED BY AUTOSAT:

- EUROPALLET
- INDUSTRIAL PALLETS
- PALLETS USED IN THE CHEMICAL INDUSTRY
- PALLETS USED IN THE FOOD INDUSTRY
- OTHER VARIATIONS ARE AVAILABLE ON REQUEST

- THE FIRST MACHINE IN THE WORLD TO USE LITHIUM TECHNOLOGY
- RECHARGE BATTERY IN 5 HOURS
- CUSTOM PROGRAMMING
- VERSION FOR FROZEN ENVIRONMENTS UP TO -30°C

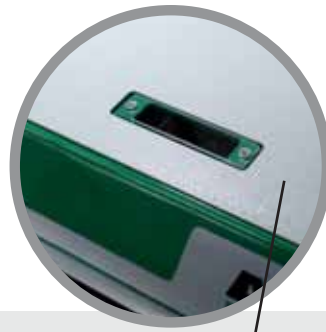




ETHERNET COMMUNICATION
ETHERNET CONNECTION FOR COMMUNICATION WITH AUTOSAT FOR REMOTE PROGRAMMING AND SERVICE



MACHINE IDENTIFICATION NUMBER
NUMERICAL RECOGNITION SYSTEM AMONG DIFFERENT AUTOSAT USED IN THE SAME PLANT



ANTI-DUST SENSOR
STANDARD EQUIPMENT FOR THE PROTECTION OF SENSORS AGAINST DUST AND DIRT



BATTERY
INNOVATIVE 48V LITHIUM BATTERY. LIGHT AND WELL-PERFORMING



HOISTING PROFILES
INTEGRATED SAFETY AGAINST FINGER CRUSHING LIFTING (STANDARD RISING) 45MM CARRYING LOAD 1.50 T



REMOTE CONTROLLER
MULTI-FUNCTION MULTIPLE LANGUAGE RESISTENT UP TO -30°C / -22°F



RUBBER SAFETY BUMPERS
IN COMPLIANCE WITH THE APPLICABLE SAFETY REGULATIONS



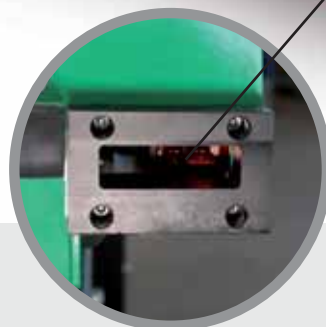
AUTOSERVICE
MANUAL TRUCK FOR MAINTENANCE OR RECOVERY OF MACHINE FROM LANE



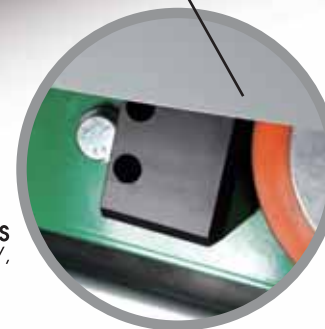
EMERGENCY PUSH BUTTON
IN COMPLIANCE WITH THE APPLICABLE SAFETY REGULATIONS



BLINKING LED
EASY IDENTIFICATION OF MACHINE IN THE LANE SIGNAL OF MACHINE IN AUTOMATIC MODE



OPTICAL FRONTAL SENSORS
PATENTED RELIABLE SAFE UNIQUE



ENERGY SAVING SENSORS
GREEN TECHNOLOGY, ENERGY SAVING



MACHINERY DIRECTIVE
AUTOSAT RESPECTS ALL OF THE PRODUCTION AND ASSEMBLY REQUIREMENTS AND STANDARDS LISTED IN THE LEGISLATION

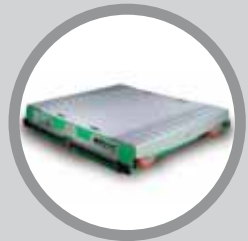


TRANSPORT PACKAGING
SAFE TRANSPORTATION IN FUMIGATED WOODEN BOX



EQUIPMENT

STANDARD STANDARD STANDARD STANDARD STANDARD STANDARD STANDARD STANDARD STANDARD



• AUTOSAT



• ONBOARD BATTERY



• BATTERY CHARGER (220/110 Vdc)



• MULTIPLE LANGUAGE REMOTE CONTROLLER



• REMOTE CONTROLLER BATTERY CHARGER (220/110 Vdc) MULTI-VOLTAGE SWITCHING CHARGER



• USER MANUALS



• FUMIGATED WOODEN BOX FOR PACKAGING

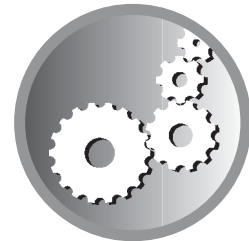
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• TRANSPORT



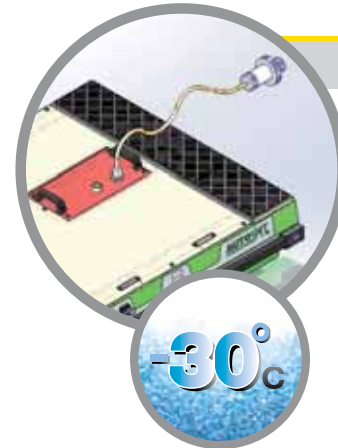
• INSTALLATION AND TRAINING



• AUTOMHA SPARE PARTS



• INCREASING LOAD CAPACITY UP TO 2.000 KG



• **FROZEN AREA (BZ) VERSION**

THE USAGE OF AUTOSAT IN THE COLD STORE IS ALLOWED UP TO -30°C PAYING ATTENTION TO CERTAIN RULES AS FOLLOW:

- 1- IF AUTOSAT IS NOT USED IS STRICTLY NOT ALLOWED TO MOVE THE CART FROM THE FROZEN AREA TO A POSITIVE TEMPERATURE AREA TO AVOID THE CONDENSATION PHENOMENON. AUTOSAT MUST BE KEPT ALWAYS IN THE FROZEN AREA.
- 2- HELPING THIS OPERATION, THE FROZEN AREA MODEL OF AUTOSAT (BZ) IS SUPPLIED WITH AN EXTERNAL POWER SUPPLY "RED BOX" THAT MUST BE INSERT IN THE BATTERY CASE, ONCE REMOVED THE LITHIUM BATTERY, AND THEN PLUGGED IT IN THE POWER LINE AS SHOWN IN THE PICTURE.

THIS OPERATION WILL KEEP THE SENSORISTIC AND ELECTRONIC AT WORKING TEMPERATURE AND READY FOR THE NEXT WORKING CYCLE.

IT'S SUGGESTED THE "RED BOX" USAGE WHEN:
 - DURING THE NIGHT TIME WHEN THE CART IS NOT USED
 - DURING THE LONG STOP PERIOD, MORE THAN 2 HOURS.

REMINDER: PLEASE DO NOT STORE STAND ALONE THE LITHIUM BATTERY INSIDE THE FROZEN AREA AND AT A TEMPERATURE BELOW +5°C.



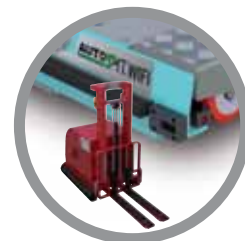
• PROTECTION FROM DRIPS FROM TRANSPORTED PALLETS



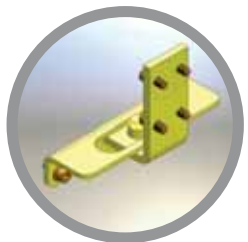
• SEA TRANSPORT PROTECTION



• WIFI AUTOSAT FOR HAND HELD



• WIFI AUTOSAT FOR AGV



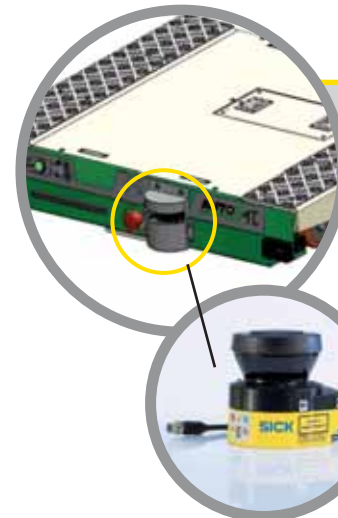
• **FORKLIFT LOCKING SYSTEM**
 THE LOCKING SYSTEM IS COMPOSED BY 2 PARTS: ONE PART FIXED ON THE FRONT OF THE AUTOSAT AND THE SECOND ONE THAT INCLUDE AN ANCHORAGE CYLINDER FIXED ON THE FORKLIFT MAST



• **FAST HOOKING BETWEEN AUTOSAT**
 AN AUTOSAT CART IS AUTOMATICALLY HOOKING ITSELF ONCE IN CONTACT TO AN OTHER AUTOSAT IN THE SAME LANE. THE USAGE OF THIS SYSTEM ONLY FOR EMERGENCY SITUATIONS

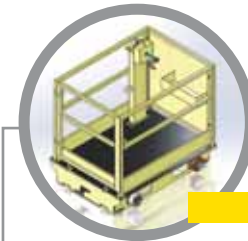


• **MAGNET STEEL PLATES**
 TO INCREASE THE STABILITY OF THE AUTOSAT ON-BOARD THE FORKLIFT FORKS, AUTOSAT CAN BE EQUIPPED WITH MAGNETS STEEL PLATE FIXED UNDERNEATH THE BODY OF THE CART



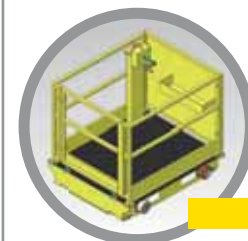
• **KIT PLS SICK**

AS SOON AS THE S300 DETECTS A POTENTIAL OBSTACLE, THE SHUTTLE REDUCES ITS SPEED DYNAMICALLY ALL THE WAY DOWN TO A CREEP SPEED OF 0.1 M/S. IF IN THE PROCESS OF CONTINUING TRAVEL, THE EMERGENCY STOP BAR ON THE SHUTTLE GENTLY TOUCHES AN OBSTACLE, IT TRIGGERS AN EMERGENCY STOP - I.E. DOING SO ONLY IF THE OBSTACLE REALLY MAKES ONWARD TRAVEL IMPOSSIBLE. THIS HAS THE GREAT ADVANTAGE THAT THE SHUTTLE DOES NOT TRIGGER AN EMERGENCY STOP EVERY TIME



AUTOSERVICE 716

- MANUAL RESCUE CART SUITABLE FOR RACKS AND AUTOSAT MAINTENANCE OPERATIONS.
- EASY TO BE MOVED BY THE FORKLIFT WITH THE HOOKS FOR THE FORKS INSERTION.
- CART TO BE USED WITH AUTOSAT MODELS: 1010/1111/1210/4840
- LOAD CAPACITY 100 KG/M² OR
- LOCAL OVERCAPACITY 150 KG (ON A FOOT 50X50MM)



AUTOSERVICE 843

- MANUAL RESCUE CART SUITABLE FOR RACKS AND AUTOSAT MAINTENANCE OPERATIONS.
- EASY TO BE MOVED BY THE FORKLIFT WITH THE HOOKS FOR THE FORKS INSERTION.
- CART TO BE USED WITH AUTOSAT MODELS: 0812/1012/1112/1165/1212/4048
- LOAD CAPACITY 100 KG/M² OR
- LOCAL OVERCAPACITY 150 KG (ON A FOOT 50X50MM)



AUTOMATIC EXTRACTOR FOR AUTOSERVICE
 THE RESCUE CART IS AUTOMATICALLY HOOKING ITSELF ONES IN CONTACT WITH THE FRONT OF THE AUTOSAT CART

STANDARD FUNCTIONS

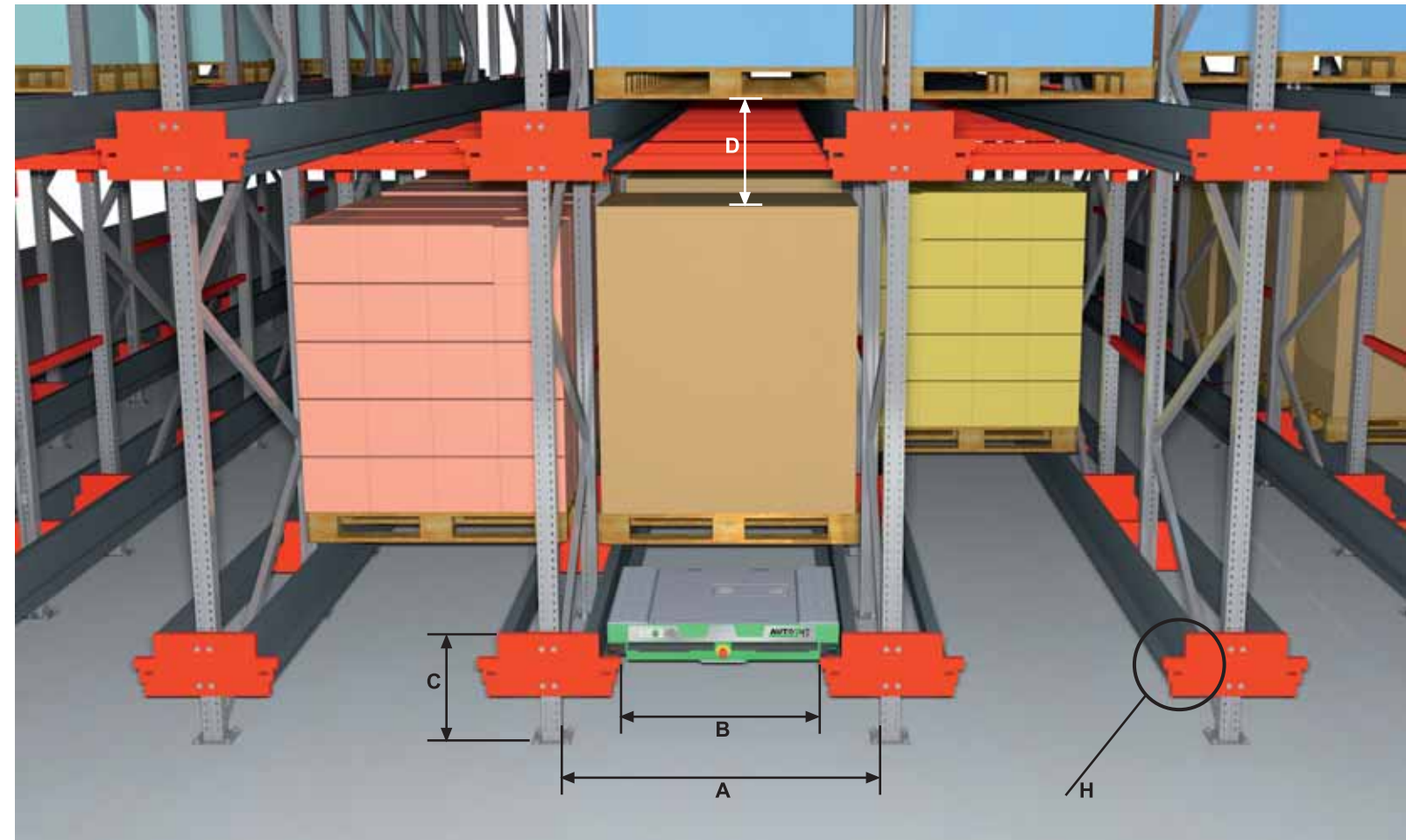
- STORING:** THE SATELLITE IS POSITIONED IN THE FIRST POSITION (HOME) ON THE DESIRED RACK STORING LANE USING A FRONTAL FORKLIFT. THEN THE OPERATOR POSITIONS THE PALLET ON THE GUIDE. THE SATELLITE, MANAGED BY THE REMOTE CONTROLLER WITH THE "STORING" BUTTON, LIFTS THE PALLET BRINGING IT TO THE FIRST FREE STORING POSITION IN THE LANE, IT DEPOSITS IT AND RETURNS TO THE HOME POSITION.
- RETRIEVING:** THE SATELLITE IS POSITIONED IN THE FIRST POSITION (HOME) ON THE DESIRED RACK STORING LANE USING A FRONTAL FORKLIFT. THE SATELLITE, MANAGED BY THE REMOTE CONTROLLER WITH THE "RETRIEVE" BUTTON, RUNS ON THE GUIDE UNTIL IT INTERCEPTS THE FIRST PALLET, IT LIFTS IT AND BRINGS IT TO THE HOME POSITION SO THAT IT CAN BE EASILY COLLECTED BY THE FORKLIFT OPERATOR. IF THE PALLET IS NOT COLLECTED BY THE OPERATOR, THE SATELLITE CANNOT PROCEED WITH ANOTHER MISSION (EXCEPT FOR ADDITIONAL FUNCTION "PLUS").
- CONTINUOUS RETRIEVING:** WHEN THE OPERATOR PRESSES THE "CONTINUOUS RETRIEVING" BUTTON ONCE, HE ACTIVATES A SERIES OF RETRIEVING MISSIONS, WITHOUT HAVING TO PRESS THE BUTTON AGAIN UNTIL THE END OF THE OPERATIONS. EFFECTIVE FOR CONSECUTIVE RETRIEVING FROM THE SAME LANE.
- MANUAL SETTING OF DISTANCE BETWEEN PALLETS FROM 20 TO 150MM:**
IN CASE OF PALLET OVERFLOW, THE DISTANCE CAN BE INDEPENDENTLY MANAGED VIA REMOTE CONTROLLER.
- MANUAL MANAGEMENT OF AUTOSAT®:** THE MOVEMENTS OF THE SATELLITE ARE CONTROLLED MANUALLY BY MEANS OF THE REMOTE CONTROLLER. EACH OPERATION STEP IS GIVEN BY DIFFERENT COMMANDS, SUCH AS LIFT, MOVE A PALLET, DEPOSIT.
- REMOTE CONTROLLER ABLE TO CONTROL UP TO 4 AUTOSATS SIMULTANEOUSLY**
- MISSIONS COUNTING**
- MAINTENANCE NOTICES**

OPTIONAL FUNCTIONS

- RESHUFFLE PALLETS "COMPACTING PUSH" MODE**
THE SATELLITE RESHUFFLES THE LANE AUTOMATICALLY, COMPACTING ALL THE PALLETS TO OCCUPY THE FREE SPACES. (FUNCTION FOR FIFO MODE – COMPACTION FROM PRODUCTION)
- RESHUFFLE PALLETS "COMPACTING PULL" MODE**
THE SATELLITE RESHUFFLES THE LANE AUTOMATICALLY, COMPACTING ALL THE PALLETS TO OCCUPY THE FREE SPACES. (FUNCTION FOR FIFO MODE - COMPACTION FROM SHIPPING)
- ANTI COLLISION AMONGST AUTOSATS® IN THE SAME LANE**
REQUESTED IF MORE THAN ONE SATELLITE IS USED IN THE SAME LANE. THE SATELLITES INTERCEPT EACHOTHER AVOIDING COLLISIONS. (FUNCTION FOR FIFO MODE)
- INVENTORY: PALLET QUANTITY COUNT**
THE SATELLITE, MOVING IN THE LANES, COUNTS THE PALLETS THANKS TO ITS UPPER SENSORS. THE TOTAL NUMBER OF PALLETS, IN THE WAREHOUSE OR IN A LANE, DEPENDING ON HOW THE SYSTEM IS CONSULTED, CAN BE VISUALIZED ON THE REMOTE CONTROLLER DISPLAY. IS USEFUL FOR MEDIUM-LONG LANES.
- MULTIPALLET: MANAGEMENT OF PALLETS WITH DIFFERENT DEPTH IN THE SAME LANE (FIFO OR LIFO)**
IT GUARANTEES A FLEXIBLE HANDLING INSIDE THE WAREHOUSE AND ALLOWS THE USE, OF PALLETS WITH DIFFERENTS DEPTH IN THE SAME LANE.
- CONTINUOUS RETRIEVING "PLUS"**
IT ALLOWS FAST RETRIEVING. THE SATELLITE HAS THE SAME BEHAVIOUR AS IN THE CONTINUOUS RETRIEVING FUNCTION, BUT EACH MISSION OF THE SATELLITE IS FREE FROM THE WITHDRAWAL OF THE PALLET. IF THE FIRST AVAILABLE PALLET IS NOT COLLECTED, THE SATELLITE PROCEEDS WITH THE SECOND ONE AND WILL WAIT IN QUEUE. THEN, WHEN THE FIRST PALLET IS COLLECTED BY THE OPERATOR, THE SATELLITE DEPOSITS THE SECOND ONE IN FIRST POSITION AND PROCEEDS WITH ANOTHER MISSION. TWO PALLETS ARE ALWAYS AVAILABLE FOR WITHDRAWAL BY THE OPERATOR.
- CONTINUOUS STORING**
WHEN THE OPERATOR PRESSES THE "CONTINUOUS STORING" BUTTON ONCE, HE ACTIVATES A SERIES OF STORING MISSIONS, WITHOUT HAVING TO PRESS THE BUTTON AGAIN UNTIL THE END OF THE OPERATIONS. EFFECTIVE FOR CONSECUTIVE STORING IN THE SAME LANE.
- DISTANCE BETWEEN PALLETS UP TO 240MM**
- DISTANCE BETWEEN PALLETS UP TO 350MM**
- SPECIAL FUNCTIONS ON REQUEST**
- DIAGNOSTIC SOFTWARE**
IN CASE OF A MISSION ERROR, THE REMOTE CONTROLLER SHOWS THE OPERATOR THE PROBLEM CODE.

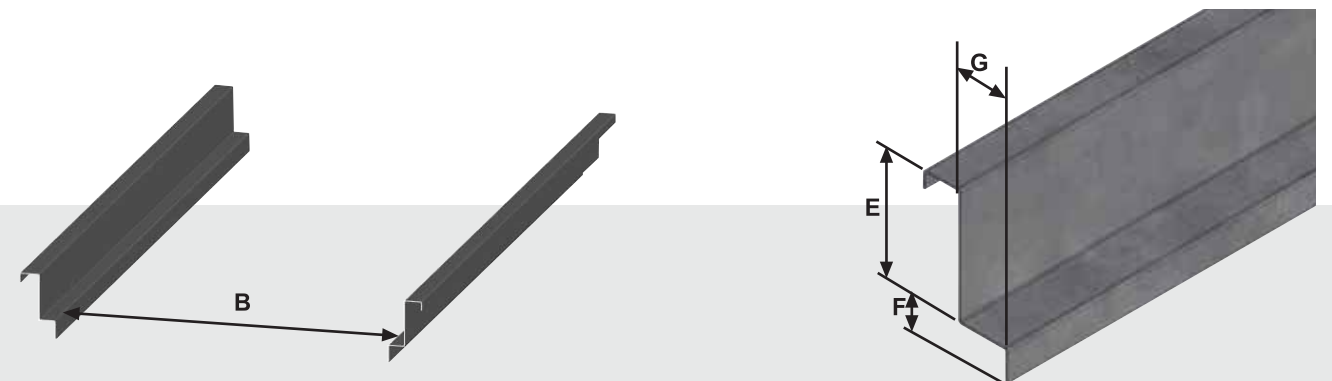
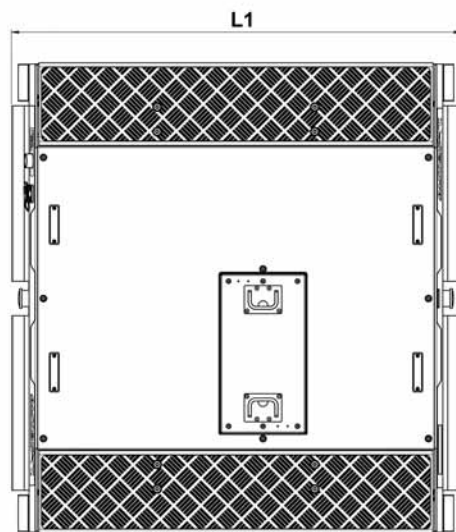
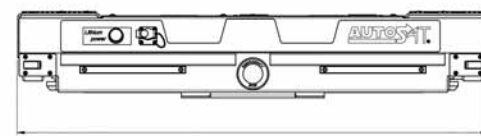
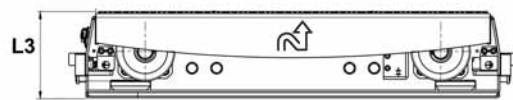
TECHNICAL CHARACTERISTICS		SAT										
		mm	mm	mm	mm	mm	mm	mm	mm	inch	inch	
Pallet dimensions (P=depth/ F=forking side)		u.m.	800(P)X1200(F)	1000(P)X1000(F)	1000(P)X1200(F)	1100(P)X1100(F)	1100(P)X1200(F)	1165(P)X1165(F)	1200(P)X1200(F)	1200(P)X1000(F)	48(P)X40(F)	40(P)X48(F)
Identification	Model		SAT.0812	SAT.1010	SAT.1012	SAT.1111	SAT.1112	SAT.1165	SAT.1212	SAT.1210	SAT.4840	SAT.4048
	Power supply		Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric
	Operator position		Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
	Carrying Load	kg	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	Tempertaure range ST / BZ	°C	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30
Weight	Machine weight	kg	220	230	230	230	230	230	230	230	230	230
	Idle wheels		Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Wheels	Wheel size front / rear	mm	120	120	120	120	120	120	120	120	120	120
	Number of driving wheels	nr	2	2	2	2	2	2	2	2	2	2
	Number of idler wheels	nr	2	2	2	2	2	2	2	2	2	2
Dimensions	L1 total length (ref. technical drawing)	mm	884	1084	1084	1184	1184	1249	1304	1304	1304	1084
	L2 total width (ref. technical drawing)	mm	947	820	947	820	947	947	947	820	820	947
	L3 total height (ref. technical drawing)	mm	175	175	175	175	175	175	175	175	175	175
	Hoisting stroke	mm	45	45	45	45	45	45	45	45	45	45
Performance	Loaded/Unloaded travelling speed	m/min	35/70	35/70	35/70	35/70	35/70	35/70	35/70	35/70	35/70	35/70
	Up speed	s	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
	Down speed	s	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
Motors	Travelling motor power	W	600	600	600	600	600	600	600	600	600	600
	Lifting motor power	W	540	540	540	540	540	540	540	540	540	540
Battery and battery charger	Battery type		Litio	Litio	Litio	Litio	Litio	Litio	Litio	Litio	Litio	Litio
	Battery weight	kg	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5	10,5
	Battery dimensions (width, length, height)	mm	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150	175x325x150
	Battery capacity	Ah	20	20	20	20	20	20	20	20	20	20
	Battery voltage	V	48	48	48	48	48	48	48	48	48	48
	Battery working range time for ST model	h	8/10	8/10	8/10	8/10	8/10	8/10	8/10	8/10	8/10	8/10
	Battery working time for BZ model	h	6	6	6	6	6	6	6	6	6	6
	Charging time 100%	h	5	5	5	5	5	5	5	5	5	5
	Battery charge current	Ah	12	12	12	12	12	12	12	12	12	12
Various	Battery life	year	>5	>5	>5	>5	>5	>5	>5	>5	>5	>5
	Type of motor control		DC	DC	DC	DC	DC	DC	DC	DC	DC	DC
Remote controller	Noice level to driver	dB(A)	<60	<60	<60	<60	<60	<60	<60	<60	<60	<60
	Frequency	MHz	433	433	433	433	433	433	433	433	433	433
	Power supply		Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery	Rechargeable Battery
	Protection		IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
	Display		Led	Led	Led	Led	Led	Led	Led	Led	Led	Led
	Tempertaure range ST / BZ	°C	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30
	Languages		ITALIAN/ENGLISH/SPANISH/FRENCH/GERMAN/CZECH/POLISH/RUSSIAN/CHINESE/KOREAN/ OTHER LANGUAGES UPON REQUEST									

SAT RACKING SYSTEM DIMENSIONS		SAT										
		mm	mm	mm	mm	mm	mm	mm	mm	inch	inch	
Pallet dimensions (P=depth/ F=forking side)		u.m.	800X1200	1000X1000	1000X1200	1100X1100	1100X1200	1165X1165	1200X1200	1200X1000	48X40	40X48
A	Dimension beetween upright	mm	1350	1150	1350	1250	1350	1320	1350	1150	1150	1350
B	Dimension between the rails	mm	843	716	843	716	843	843	843	716	716	843
C	Minimum high first level	mm	270	270	270	270	270	270	270	270	270	270
D	Minimum distance between pallet in height	mm	300	300	300	300	300	300	300	300	300	300
Pallet deflexion		mm	30	30	30	30	30	30	30	30	30	30



DIMENSIONAMENTO GUIDA SAT		SAT										
		mm	mm	mm	mm	mm	mm	mm	mm	mm	inch	inch
Pallet dimensions (P=depth/ F=forking side)		u.m.	800X1200	1000X1000	1000X1200	1100X1100	1100X1200	1165X1165	1200X1200	1200X1000	48X40	40X48
E	Hight rail	mm	170	170	170	170	170	170	170	170	170	170
F	Hight rail	mm	45	45	45	45	45	45	45	45	45	45
G	Width rail	mm	70	70	70	70	70	70	70	70	70	70
H	End stopper dimensions LxH	mm	70x60	70x60	70x60	70x60	70x60	70x60	70x60	70x60	70x60	70x60

TECHNICAL INFORMATION





AUTO5AT[®]

FIELDS OF APPLICATION

- FOOD INDUSTRY
- DAIRY INDUSTRY
- CONTROLLED TEMPERATURE
- REFRIGERATED TEMPERATURE
- LOGISTIC CENTERS

VIDEO
ON WWW



AUTOSAT EVOLUTION

- SEMI-AUTOMATIC MACHINE
- ## BATTERY POWERED WIFI COMMUNICATION

AUTOSAT[®] WIFI



AUTOSATWIFI IS THE INNOVATION OF USE OF THE AUTOSAT SYSTEM TOGETHER WITH HAND HELD AND AUTOMATIC GUIDED VEHICLES (AGV).

THE CONCEPT IS THAT MANUAL COMMANDS BY THE OPERATOR ARE NO LONGER NECESSARY, WHEREAS OPERATIONS TAKE PLACE AUTOMATICALLY BY MEANS OF WIFI COMMANDS FOR COMMUNICATION WITH WMS (WAREHOUSE MANAGEMENT SOFTWARE). THE POWER SUPPLY REMAINS ONBOARD THE MACHINE, WITH A STATE-OF-THE-ART LITHIUM BATTERY AND IT IS STILL POSSIBLE TO CONTROL AUTOSATWIFI WITH THE REMOTE CONTROLLER SUPPLIED, ON REQUEST, TOGETHER WITH THE MACHINE.

FOR TECHNICAL DATA PLEASE REFER TO THE AUTOSAT ARTICLE TABLE PAGE 26 AND 27



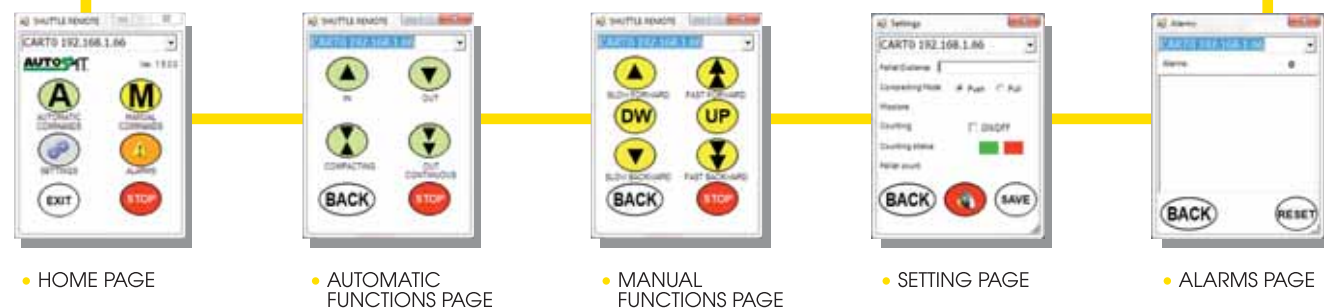
ADVANTAGES OF AUTOSATWIFI WITH HAND HELD:

THE OPERATOR HAS FULL VIEW OF THE WHOLE STORAGE AND ALSO HAS ACCESS TO THE MACHINE COMMANDS:

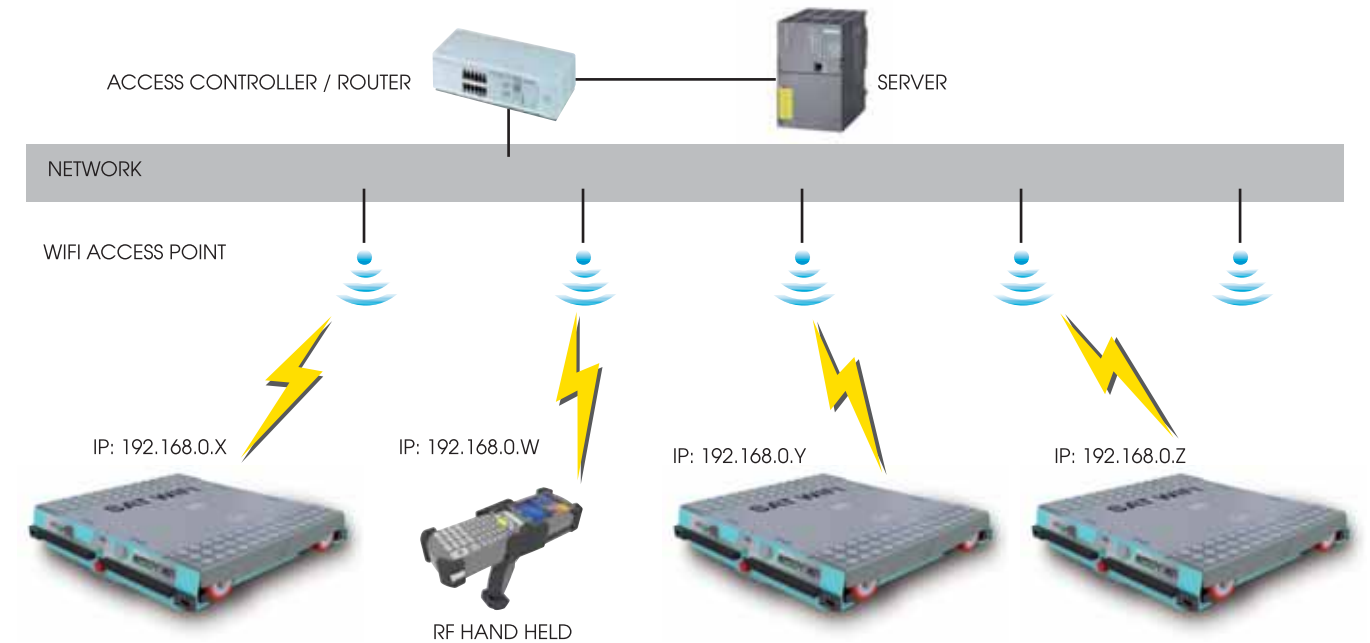
- VIA HANDSET, HE RECEIVES STORE KEEPING UNITS FOR INBOUND AND THE DESTINATION FOR STORING. ON THE HANDSET, BY OPENING A SUITABLE WINDOW DESIGNED BY AUTOMHA, THE OPERATOR CAN HAVE ACCESS TO ALL THE AUTOSAT COMMANDS. BY PRESSING THE "IN" COMMAND, AUTOSATWIFI AUTOMATICALLY PERFORMS THE STORING OPERATIONS.
- VIA HANDSET, HE RECEIVES THE MISSION TO UNLOAD THE PALLET FROM STORAGE AND HE RECEIVES THE GROUND BAY ADDRESS FOR PICKING AND SHIPPING. THE MISSION TO RETRIEVE THE PALLET FROM STORAGE IS ALSO ACTIVATED BY THE OPERATOR BY MEANS OF THE COMMAND INTERFACE ON THE HANDSET.

THE SINGLE OR MULTIPLE HANDSETS CAN BE SUPPLIED BY AUTOMHA TOGETHER WITH THE WMS SOFTWARE. ON THE OTHER HAND, IF THE CUSTOMER ALREADY HAS THE WMS RF (RADIO FREQUENCY) SYSTEM, AUTOMHA CAN INSTALL THE SOFTWARE FILE ON THE HANDSETS SO AS TO OPEN COMMUNICATION WITH THE AUTOSATWIFI MACHINES SUPPLIED. BY MEANS OF THIS WINDOW, ALL THE MACHINE COMMANDS, SUMMARIZED IN THE RF REMOTE CONTROLLER SUPPLIED TOGETHER WITH AUTOSATWIFI, ARE REPLICATED. IN THIS WAY, THE HANDSET REPRESENTS THE CONNECTION POINT BETWEEN THE WMS SYSTEM AND THE AUTOSATWIFI. THE FILE SUPPLIED BY AUTOMHA TO BE INSTALLED ON THE HANDSET HAS BEEN DEVELOPED FOR WINDOWS CE, WINDOWS MOBILE AND WINDOWS XP OPERATING SYSTEM.

HAND HELD SCREENS



AUTOSAT WIFI NETWORK



ADVANTAGES OF AUTOSATWIFI WITH AGV:

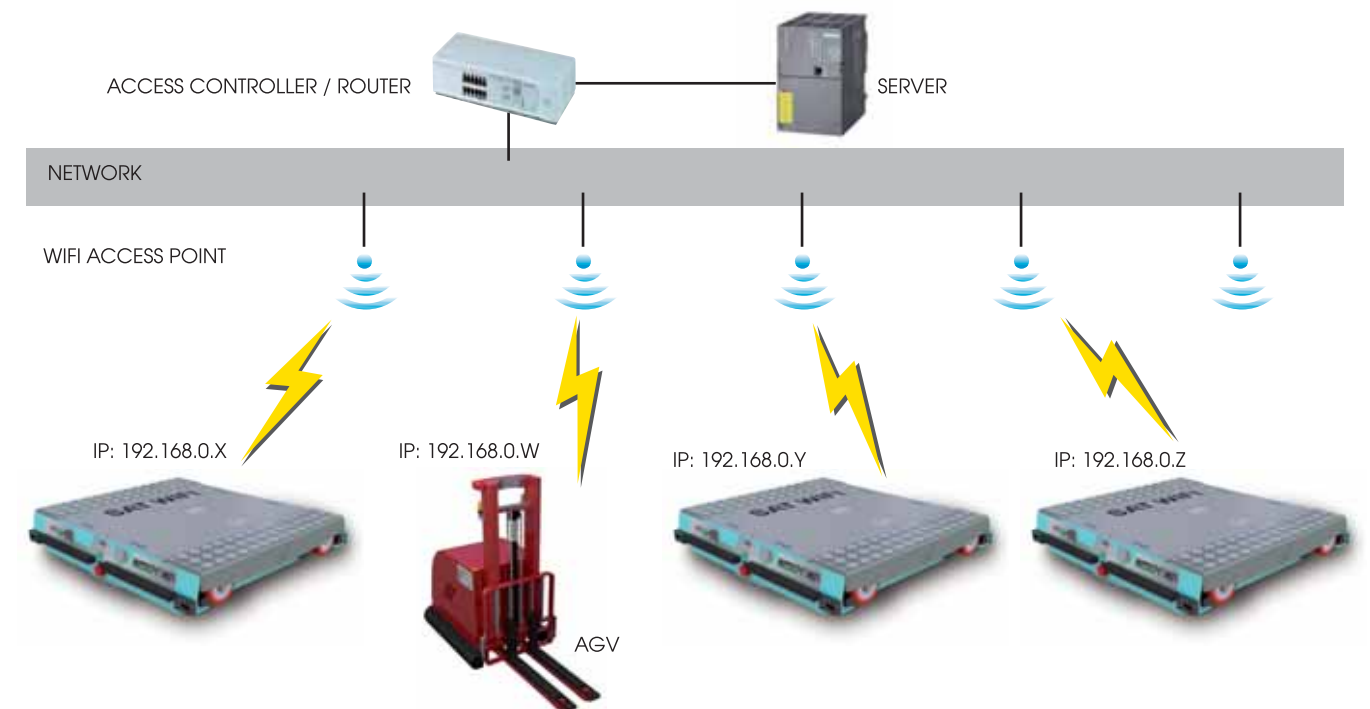
AUTOMHA PROVIDE THE SOFTWARE PROTOCOL DATA EXCHANGE FOR THE AGV COMMUNICATION

WITH AGV THE SYSTEM BECOMES COMPLETELY AUTOMATIC.

- AGV RECEIVES THE ORDERS TO CARRY OUT VIA WMS AND, TOGETHER WITH AUTOSATWIFI, IT GOES ON PERFORMING THE REQUESTED MISSIONS.

THE FUNCTIONAL STRUCTURE IS BASED UPON THE FOLLOWING CONFIGURATIONS:

- WMS SENDS ORDERS TO AGV
- AGV INFORMS WMS OF THE RESULT OF THE MISSION AND OF THE STATUS OF THE MACHINE
- AGV IS CLOSELY CONNECTED TO AUTOSATWIFI



AUTOSAT EVOLUTION

● FULLY AUTOMATIC MACHINE

NO BATTERY

SUPERCAPACITOR TECHNOLOGY

THE NEW SATELLITE, **SUPERCAP**, IS CONCEIVED TO PERFORM MULTI DEEP STORAGE MISSIONS. IT HAS BEEN DESIGNED AND PRODUCED TO OPERATE MOSTLY IN FULLY AUTOMATIC SYSTEMS.

THE INTRODUCTION OF SUPERCAPACITOR TECHNOLOGY HAS MADE IT POSSIBLE TO OVERCOME THE TYPICAL DEFECTS OF THE SYSTEMS POWERED BY ACCUMULATORS THAT NEED A LONG RECHARGING TIME (IN THE CASE OF SATELLITE WITH INTEGRATED BATTERIES) OR THE PRESENCE OF OPERATORS TO REPLACE THE ACCUMULATORS (IN THE CASE OF MACHINES WITH EXTRACTABLE SOURCE OF ENERGY). IN THE FIRST CASE, IT IS OBVIOUS THAT REDUNDANT SATELLITES ARE NEEDED: WHILE ONE MACHINE IS OPERATIVE, THE OTHER (OR THE OTHERS) IS ON CHARGE. IN THE SECOND CASE, THE CONCEPT OF AUTOMATIC MACHINE IS COMPLETELY DEBASED, AS IT IS NECESSARY TO HAVE AN OPERATOR WITH THE TASK TO CHANGE THE ACCUMULATORS.



SUPERCAP



CHARACTERISTICS

SUPERCAP BY AUTOMHA CAN BE INSTALLED BOTH ON STACKER CRANES AND ON MOVER CARTS. THIS NEW MACHINE IS POWERED BY A SUPERCAPACITOR THAT, UNLIKE AN ACCUMULATOR, DOES NOT REQUIRE:

- CONSIDERABLE RECHARGING TIME
- MAINTENANCE
- RISKS DUE TO CHEMICAL LIQUID LOSSES THAT CAN POLLUTE THE HANDLED/STORED GOODS AND THE ENVIRONMENT

SUPERCAP IS EASILY ABLE TO OPERATE EVEN IN FROZEN AND/OR PARTICULARLY HOSTILE ENVIRONMENTS.

THE OPERATION OF SUPERCAP IS SIMPLE AND RELIABLE. ON THE MOTHER VEHICLE (MOVER CART OR STACKER CRANE) THERE ARE SOME FLOATING COPPER BRUSHES. WHEN NECESSARY, AND WHEN SUPERCAP IS ONBOARD THE MOTHER VEHICLE, THE POWER SYSTEM, TO BE APPLIED ONBOARD THE LATTER, PROCEEDS TO RECHARGE THE CAPACITOR. WHEN FULLY FUNCTIONING, THE RECHARGING TIME IS 7s. WITH A COMPLETELY CHARGED CAPACITOR, SUPERCAP IS READY TO PERFORM THE NEXT MISSION OF STORING OR RETRIEVING THE STORE KEEPING UNIT.

THE WIFI COMMUNICATION SYSTEM SENDS A MINUTE BY MINUTE REPORT TO THE MOTHER VEHICLE ON THE STATUS OF THE MACHINE AND THE ENERGY AVAILABLE TO PERFORM ANOTHER MISSION, WITHOUT NEEDING TO BE RECHARGED AGAIN.

SUPERCAP IS COMPLETELY "TRANSPARENT" TO THE GENERAL AUTOMATION SYSTEM. FROM AN OUTSTATION IT IS POSSIBLE TO HAVE ACCESS TO THE AUTOMATION SYSTEM OF THE VEHICLE IN ORDER TO PERFORM CONTROL OPERATIONS AND TO MODIFY THE PARAMETERS.

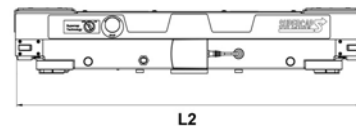
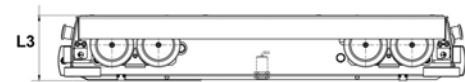
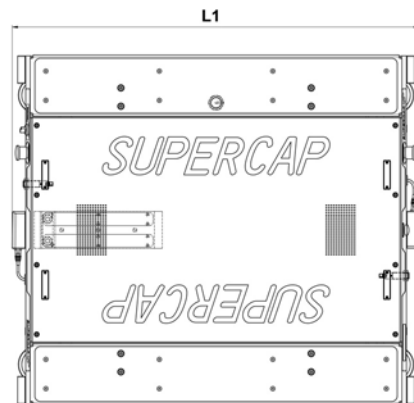
THANKS TO THE ABSENCE OF CONSTRAINTS BETWEEN THE MOTHER VEHICLE AND SUPERCAP, IT IS ALSO POSSIBLE TO USE MULTITASKING APPLICATIONS – A SINGLE MOTHER VEHICLE CAN MANAGE EVEN MORE THAN ONE SUPERCAP.

+ PLUS

- POSSIBILITY TO OPERATE IN CONSIDERABLY LONG STORING LANES, THANKS TO THE ABSENCE OF ELECTRICAL CABLES BETWEEN SUPERCAP AND THE MOTHER VEHICLE
- CONSIDERABLY LONG LIFE OF THE POWER SUPPLY COMPONENT (CAPACITOR)
- EASY TO INSPECT AND EASY TO USE THE AUTOMATION CODE, SINCE ALL THE TECHNOLOGY IS INTEGRATED IN THE SUPERCAP MACHINE
- EXTREMELY FLEXIBLE: THIS MACHINE CAN BE USED IN A WIDE RANGE OF MOTHER VEHICLES



TECHNICAL CHARACTERISTICS		SUPERCAP					
		mm	mm	mm	inch	inch	
Pallet dimensions (P=depth/ F=forking side)		u.m.	800(P)X1200(F)	1000(P)X1200(F)	1200(P)X1200(F)	48(P)X40(F)	40(P)X48(F)
Identification	Model		SC.0812	SC.1012	SC.1212	SC.4840	SC.4048
	Power supply		Electrical	Electrical	Electrical	Electrical	Electrical
	Carrying Load	kg	1500	1500	1500	1500	1500
	Temperature range ST / BZ	°C	+45/-30	+45/-30	+45/-30	+45/-30	+45/-30
Weight	Machine weight	kg	220	220	220	220	220
			Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Wheels	Idle wheels		Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane
	Wheel size front / rear	mm	120	120	120	120	120
	Number of driving wheels	nr	4	4	4	4	4
	Number of idler wheels	nr	4	4	4	4	4
Dimensions	L1 total length (ref. technical drawing)	mm	884	1084	1304	1304	1084
	L2 total width (ref. technical drawing)	mm	947	947	947	820	947
	L3 total height (ref. technical drawing)	mm	175	175	175	175	175
	Hoisting stroke	mm	45	45	45	45	45
Performance	Loaded/Unloaded travelling speed	m/min	40/65	40/65	40/65	40/65	40/65
	Up speed	s	1,5	1,5	1,5	1,5	1,5
	Down speed	s	1,5	1,5	1,5	1,5	1,5
Motors	Travelling motor power	W	600	600	600	600	600
	Lifting motor power	W	540	540	540	540	540
Various	Supercap voltage	V	48	48	48	48	48
	Charging time 100%	s	7	7	7	7	7
	Supercap life	year	>10	>10	>10	>10	>10
	Type of motor control		DC	DC	DC	DC	DC
	System working time	h/day	24/7	24/7	24/7	24/7	24/7



• RENDERING SHOWING SUPERCAP CHARGING PROCESS ON BOARD THE STACKER CRANE CRADLE



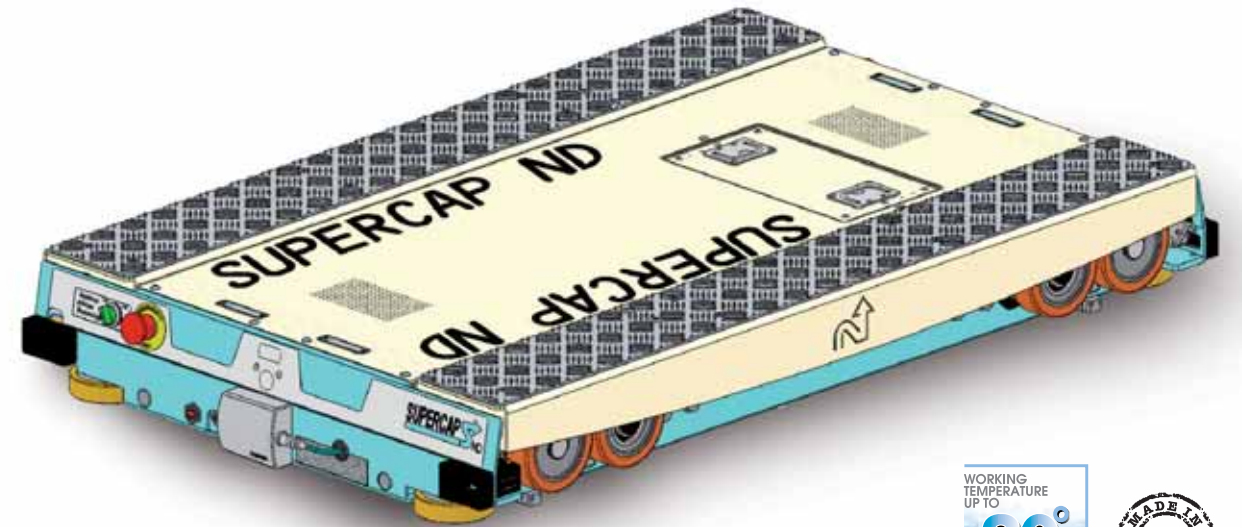
• RENDERING SHOWING THE SUPERCAP WORKING ON BOARD A STACKER CRANE

7 SECONDS UP TO 300 M RANGE

EQUIPMENT

- CAPACITOR ABLE TO SUPPLY ALL THE ELECTRICAL ENERGY NEEDED TO PERFORM WAREHOUSE MISSIONS
- CONDUCTIVE BRUSHES SITUATED ONBOARD THE MOTHER VEHICLE
- ELECTRONIC UNIT WHICH MANAGES AND CORRECTLY PERFORMS THE COMMANDS
- DC DRIVER TO CONTROL THE MOTORS FOR THE TRAVELLING AND LIFTING/LOWERING OF THE STORE KEEPING UNITS (DEPOSITING OR RETRIEVING OF THE STORE KEEPING UNITS IN THE STORING LANE)
- WIFI COMMUNICATION SYSTEM FOR THE RECEPTION OF TASK RESULTS ON PART OF THE MOTHER VEHICLE
- THE WIFI COMMUNICATION SYSTEM ALSO INTEGRATES THE SAFETY COMMANDS TO CONTROL THE VEHICLE IN MORE CRITICAL CONDITIONS (EMERGENCY, ENTRANCE IN GUARDED AREA, ALARMS ON THE AUTOMATION SYSTEM)

TECHNICAL INFORMATION



CHARACTERISTICS

- SUPERCAP NEVER DIE SUITABLE IN
- ROAMING CONDITIONS
 - FIFO CONDITIONS

EQUIPPED WITH

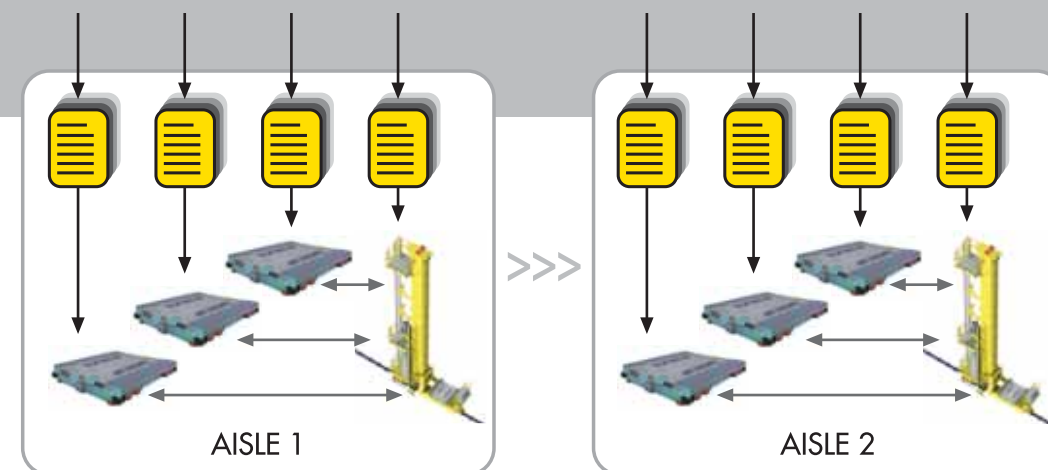
SUPERCAPACITOR

AND

LITHIUM TECHNOLOGY

SUPERCAP-ND EQUIPPED WITH AN ADDITIONAL LITHIUM BATTERY TO KEEP THE CART INSIDE THE LANE WAITING FOR THE STORAGE RETRIVAL MACHINE
IN THIS CONDITIONS THE SUPERCAP-ND CAN BE USED IN A ROAMING SOLUTION, MEANS BY HAVING MULTIPLE CARTS EACH STORAGE RETRIVAL MACHINE

WAREHOUSE CONTROL



● THE PALLET STORING SYSTEM MODULAR FULLY AUTOMATIC

AUTOSATMOVER[®]

AUTOSTAMOVER[®]: THE VERSATILE AND FULLY AUTOMATIC STATE-OF-THE-ART MODULAR SYSTEM FOR MULTI DEPTH PALLET STORING.

AUTOSATMOVER[®] INCLUDES:

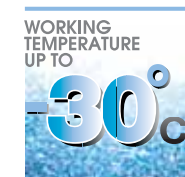
- **MOVER**, THE MOTHER VEHICLE THAT RUNS ON RAILS PERPENDICULAR TO THE STORING LANES AND THAT IS POWERED BY A POWER BUS BAR AT EVERY LOADING LEVEL
- **SUPERCAP**, THE ONBOARD SATELLITE, CONTROLLED BY THE MOTHER VEHICLE VIA WIFI AND USED IN OPERATIONS IN THE VARIOUS STORING LANES FOR THE AUTOMATIC RETRIEVING/DEPOSITING OF THE PALLETS.

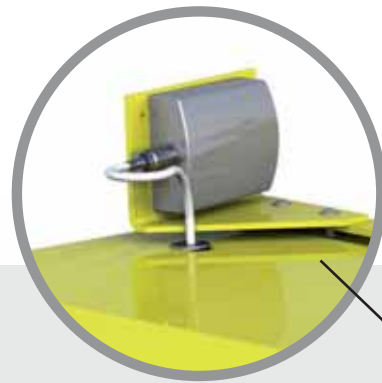
THE DIFFERENT SYSTEM CONFIGURATIONS NECESSARILY PROVIDE **LIFTING/LOWERING SYSTEMS** FOR PALLETS, IN ORDER TO DELIVER THE PALLET TO THE DIFFERENT STORING LANE WHERE AUTOSATMOVER CAN HANDLE IT, AND LIFTING/LOWERING SYSTEMS FOR MOVER CARTS, ONLY IN THE CONFIGURATIONS IN WHICH A SINGLE AUTOSTAMOVER IS WORKING ON MORE THAN ONE LEVEL.

FOR **AUTOSATMOVER**[®] TOO, SYSTEM MANAGEMENT IS ENTRUSTED TO OUR WMS SOFTWARE.

+ PLUS

- MORE AVAILABILITY OF THE SYSTEM AS A WHOLE
- LOWER COSTS COMPARED TO OTHER SYSTEMS WITH THE SAME POTENTIALITY
- BETTER OVERALL PERFORMANCE OF THE SYSTEM
- LOW POWER CONSUMPTION OF THE SYSTEM
- FAST AND SIMPLE INSTALLATION
- MAXIMUM REDUCTION OF COSTS FOR ASSISTANCE AND MAINTENANCE
- WORKING TEMPERATURE FROM -30°C TO +40°C
- AVAILABILITY OF THE SYSTEM DURING MAINTENANCE ON THE MACHINES
- GREAT FLEXIBILITY AND SIMPLICITY IN PICKING

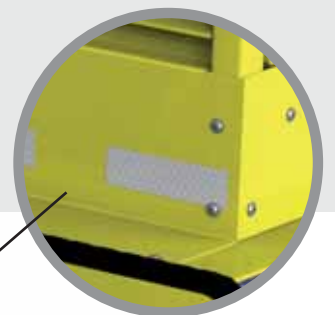




ANTENNA CONNECTED TO SUPERCAP



SIZING SENSORS FOR OVERHANGING CONTROL



SKU CENTERING SENSORS CONTROL



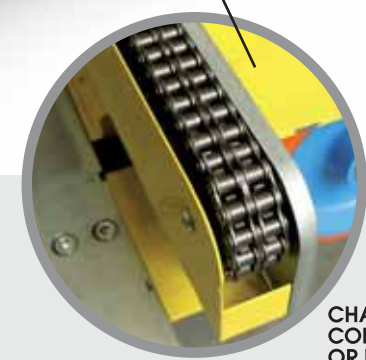
INFRARED COMMUNICATION WITH WMS



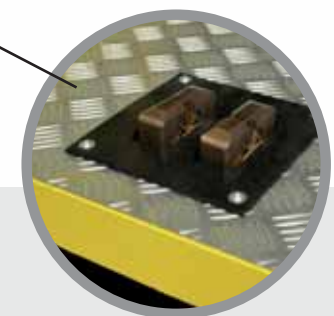
HUMAN MACHINE INTERFACE (HMI) PANEL



DRIVING WHEELS

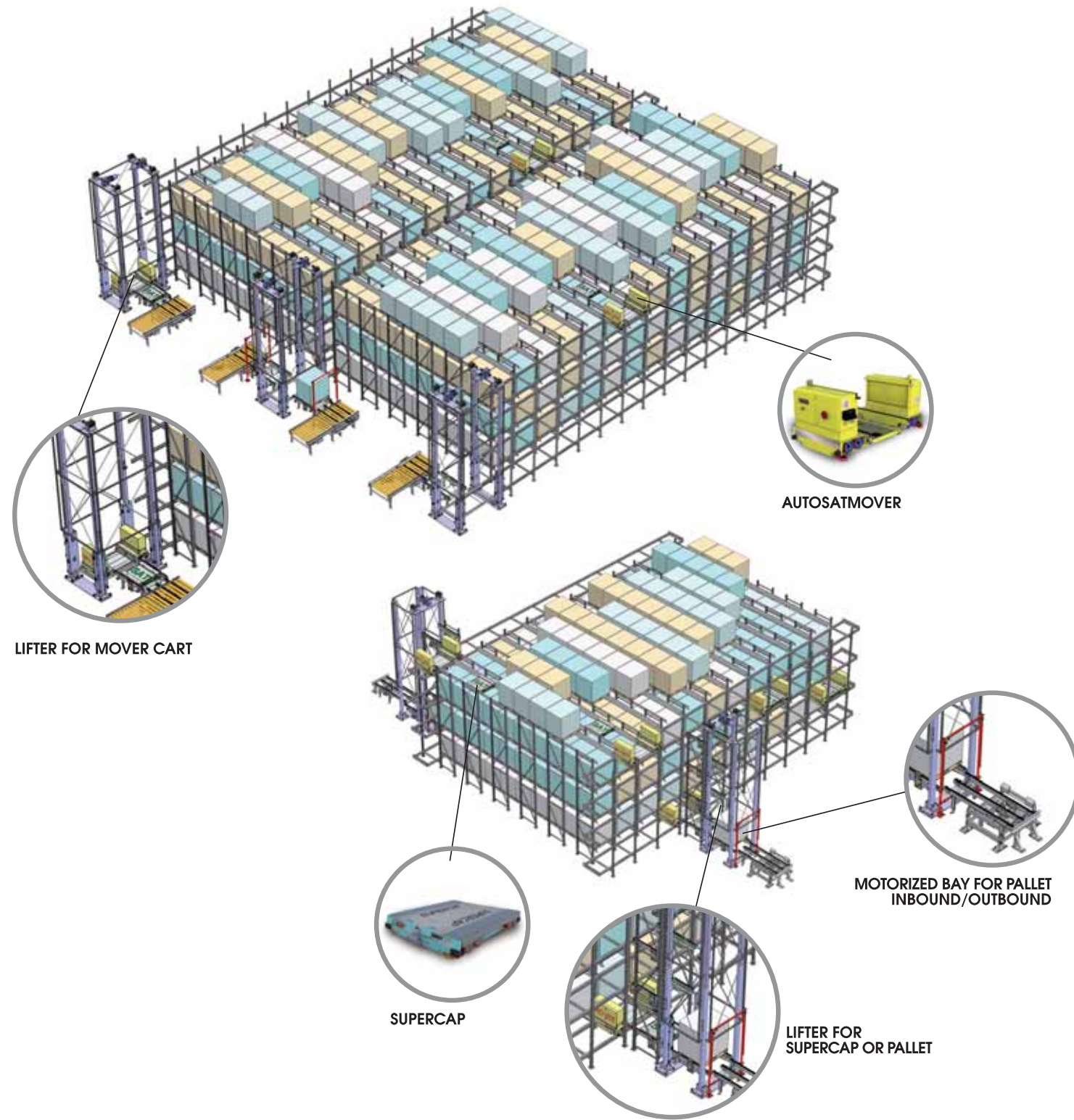


CHAIN CONVEYOR FOR CONNECTION TO BUFFER STATION OR FOR PALLET HANDLING



COPPER CONDUCTIVE STRIPES FOR SUPERCAP CHARGING

SYSTEM CONFIGURATIONS



HIGH FLEXIBILITY IN THE CONFIGURATIONS AND ADAPTABILITY TO THE AREA DEDICATED, SOME EXAMPLES:



FIELDS OF APPLICATION:

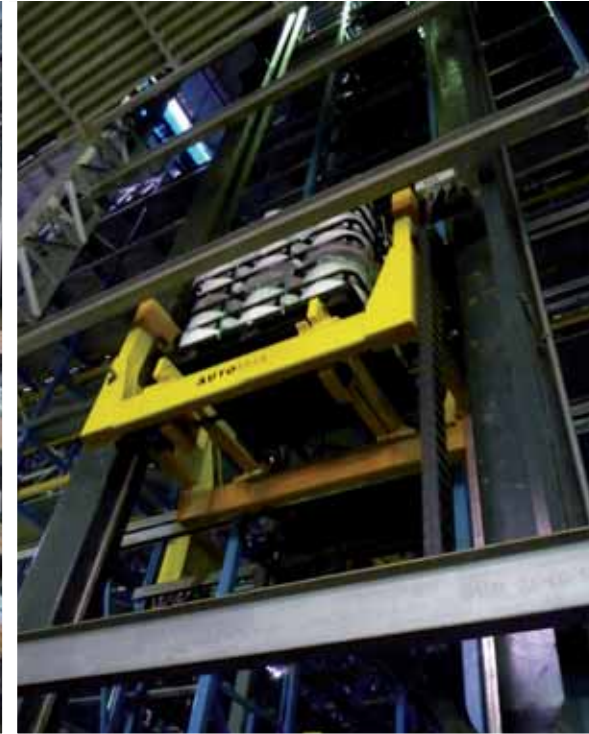
- BY CHOOSING AUTOSATMOVER, ALL THE INDUSTRIES THAT CURRENTLY USE A CLASSIC "DRIVE-IN" FOR PALLET STORING CAN HAVE A FULLY AUTOMATIC SYSTEM:
 - FOOD INDUSTRY
 - FROZEN ENVIRONMENTS
 - CHEMICAL AND PHARMACEUTICAL INDUSTRIES
 - FOOD DISTRIBUTION CENTRES
 - LOGISTICS
- ALL THE FACTORIES THAT CURRENTLY USE AUTOSAT AND SIMILAR MACHINES FOR PALLET STORING, IN ORDER TO MAXIMIZE CUSTOMER SATISFACTION
- ALL THE FACTORIES MANAGING A SMALL NUMBER OF CODES BUT WITH ELEVATED HANDLING
- ALL THE FACTORIES THAT HAVE THE NEED TO PRODUCE AUTOMATED SYSTEMS INSIDE THEIR PLANT MAKING THE MOST OF THE AREA AVAILABLE, TO MEET THE NEEDS OF THE MARKET AND TO KEEP MANAGEMENT COSTS UNDER CONTROL

AUTOSATMOVER CHARACTERISTICS

SPEED	150 M/MIN
AUTOSATMOVER POWER SUPPLY	POWER BUS BAR
SUPERCAP POWER SUPPLY	SUPERCAPACITOR
WORKING TEMPERATURE	FROM -30°C TO +45°C / FROM -22°F TO 113°F
COLOUR	YELLOW RAL 1021

MODEL	CAPACITY MAX KG	DEPTH PALLET MM	WIDTH PALLET FORCKING SIDE MM
MOV.0812	1500	800	1200
MOV.1012	1500	1000	1200
MOV.1212	1500	1200	1200
MOV.4048	1500	1016	1220
MOV.4840	1500	1220	1016

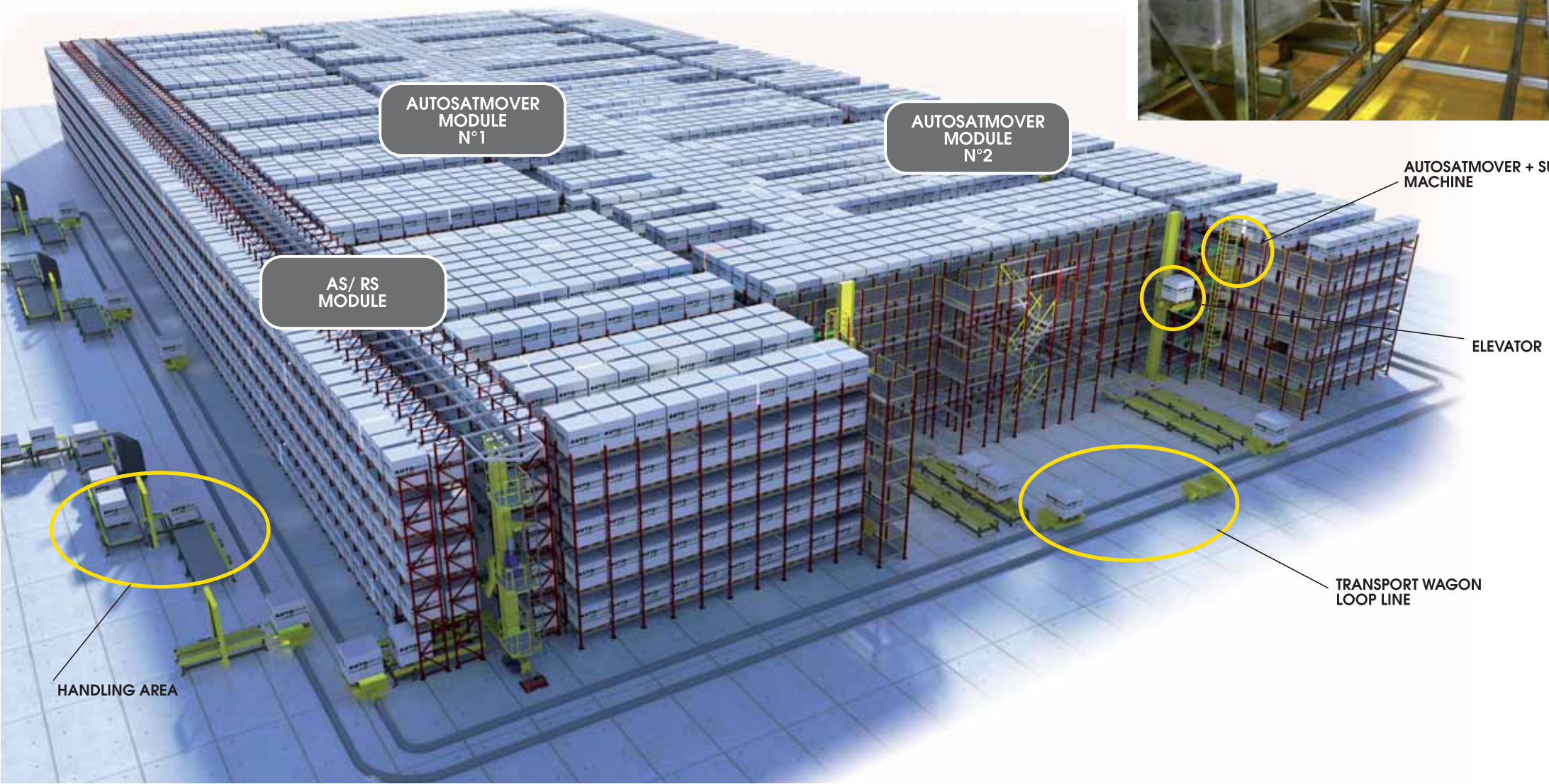
TECHNICAL INFORMATION



AUTOSATMOVER®

CASE STUDY SYSTEM GENERAL INFORMATION:

- PALLET POSITION NR. 14.575
- NR. 2 AUTOSATMOVER MODULES
- NR.1 AS/RS MODULE



VIDEO
ON WWW



● THE EXPANDABLE VERTICAL WAREHOUSE

MASTER LIFT IS THE AUTOMATIC VERTICAL WAREHOUSE EVOLUTION:

A NEW AUTOMATIC STORING AND PICKING CONCEPT CHARACTERIZED BY STRUCTURAL SIMPLICITY AND EXPANDABILITY.

IN FACT, BY ADDING VERTICAL MODULES, MASTER LIFT IS COMPLETELY EXPANDABLE AND IT ALLOWS CONSIDERABLE STORAGE OF PRODUCTS AND A FAST AND COMPUTERIZED WITHDRAWAL. EACH STRUCTURAL DETAIL IS A SYNONYM OF GREAT TECHNOLOGY.

FLATPACK SYSTEM: IT EXTRACTS AND INSERTS THE TRAYS ON THE STORAGE RACKS ON DIFFERENT LEVELS AND SERVES THE PICKING BAYS. THE SLIDING AND LIFTING MOVEMENTS ARE MANAGED BY AN AUTOMATIC MACHINE.

STORE KEEPING UNITS: THE TRAYS ARE MADE OF FOLDED METAL SHEETS WITH SLOTS IN THE SIDES SO THAT IT IS POSSIBLE TO DIVIDE THEM INTO COMPARTMENTS AND/OR ADD PLASTIC CONTAINERS FOR SMALL OBJECTS.

STORAGE TRAY OPTIMISATION: THIS IS GUARANTEED BY THE SKU MAXIMUM HEIGHT DETECTION VIA THE BAY INTERFACE, WHICH DYNAMICALLY DETERMINES THE STORAGE TRAY POSITION, THUS OPTIMISING STORAGE.

SAFETY INTEGRATED IN THE BAY: SAFETY FOR THE OPERATORS IS GUARANTEED BY THE PHOTOCELLS SYSTEM.

MODULARITY: THIS ALLOWS US TO BUILD A WAREHOUSE WITH DESIRED STORAGE CAPACITY AND MAXIMUM EXPANDABILITY.



MASTERlift

+ PLUS

- MAXIMUM POSSIBILITY OF EVOLUTION:** THE PARTICULAR PRODUCTION TECHNOLOGY AND THE MOVEMENTS OF THE AUTOMATIC MACHINE ALLOW THE WAREHOUSE TO BE EASILY EXPANDED BY ADDING VERTICAL MODULES AND TRAYS, ALL MANAGED BY THE SAME MACHINE.
- HIGH PERFORMANCE:** THE FLATPACK SYSTEM RETRIEVES THE TRAYS FROM THEIR STORAGE POSITION AND IT DEPOSITS THEM ON THE RIGHT BAY FOR WITHDRAWAL. THE INTERPOLATION OF THE SLIDING AND LIFTING MOVEMENTS CONSIDERABLY REDUCES THE TIME NEEDED TO RETRIEVE AND DEPOSIT THE TRAYS, GUARANTEEING A GREAT PERFORMANCE.
- CONFIGURABLE AND MODULAR:** MASTERLIFT CAN BE EXPANDED IN AN EASY WAY AND MORE BAYS CAN BE ADDED ON DIFFERENT LEVELS.
- AWM SOFTWARE:** THE MANAGEMENT OF THE SYSTEM ALLOWS:
 - PERSONALISED CONNECTION TO THE HOST OF THE COMPANY
 - DATABASE MANAGEMENT
 - AUTOMATIC SKU INPUT
 - AUTOMATIC SKU OUTPUT
 - INTERFACE WITH BARCODE READER AND WEIGHING SYSTEM
 - WAREHOUSE MAP CONFIGURATION
 - OPTIMIZATION OF WAREHOUSE STORAGE
- CUSTOMIZABLE** IS POSSIBLE TO DEVELOP CUSTOM MODULES FOR SPECIFIC NEEDS.



VIDEO ON WWW



MODULARITY



MASTER2
 • HEIGHT 4M
 • 1 OPERATOR BAY



MASTER4
 • HEIGHT 4M
 • 2 OPERATOR BAYS



MASTER6
 • HEIGHT 10M
 • 2 OPERATOR BAYS ON 2 LEVELS



TECHNICAL INFORMATION

DIMENSIONS		LENGTH MM	HEIGHT MAX. MM	DEPTH MM
MASTER1	BASIC MACHINE	4040	12000	3300
VERTICAL STORAGE	ADDED MODULE	2340		

CONFIGURATIONS		LENGTH MM	HEIGHT MAX. MM	DEPTH MM
MASTER1	BASIC MACHINE	4040	12000	3300
MASTER2	BASIC MACHINE +1 VS MODULE	6380		
MASTER3	BASIC MACHINE +2 VS MODULE	8720		
MASTER4	BASIC MACHINE +3 VS MODULE	11060		
MASTER5	BASIC MACHINE +4 VS MODULE	13400		
MASTER6	BASIC MACHINE +5 VS MODULE	15740		
MASTER7	BASIC MACHINE +6 VS MODULE	18080		
MASTER8	BASIC MACHINE +7 VS MODULE	20420		
MASTER9	BASIC MACHINE +8 VS MODULE	22760		
MASTER10	BASIC MACHINE +9 VS MODULE	25100		

TRAYS	
EXTERNAL DIMENSIONS	2190 X 925 X 75 MM
INTERNAL DIMENSIONS	2100 X 820 X 60 MM
CAPACITY OF SINGLE TRAY UP TO	500 KG
SLOTS FOR SEPARATORS	

PERFORMANCE	
TRAVELLING SPEED	60 M/MIN
LIFTING SPEED	60 M/MIN
EXTRACTION SPEED	36 M/MIN
MAX ACCELERATION	0,5 M /S ²

QUANTITY OF TRAYS (PITCH 100MM)										
HEIGHT	MASTER1	MASTER2	MASTER3	MASTER4	MASTER5	MASTER6	MASTER7	MASTER8	MASTER9	MASTER10
4 M	54	108	162	216	270	324	378	432	486	540
5 M	74	148	222	296	370	444	518	592	666	740
6 M	94	188	282	376	470	564	658	752	846	940
7 M	114	228	342	456	570	684	798	912	1026	1140
8 M	134	268	402	536	670	804	938	1072	1206	1340
9 M	154	308	462	616	770	924	1078	1232	1386	1540
10 M	174	348	522	696	870	1044	1218	1392	1566	1740
11 M	194	388	582	776	970	1164	1358	1552	1746	1940
12 M	214	428	642	856	1070	1284	1498	1712	1926	2140



AUTOMATED SOLUTIONS: HEAVY MINILOAD

AUTOMHA'S HEAVY MINILOAD WAREHOUSES ARE AUTOMATIC STORING SYSTEMS FOR CONTAINERS OR TRAYS, USED IN ALL SITUATIONS CHARACTERIZED BY THE WITHDRAWAL OF HIGH FLOW RATES OF HEAVY GOODS.

THE WAREHOUSE CONSISTS OF A CENTRAL CORRIDOR WHERE A STACKER CRANE RUNS AND OF A RACKING SYSTEM ON EACH SIDE WHERE THE BOXES OR TRAYS ARE PLACED. ON THE SIDE, THERE IS ONE OR MORE AUTOMATION AREAS, WHERE THE STACKER CRANE DEPOSITS THE LOAD EXTRACTED FROM THE RACKS.

THE CONVEYORS BRING THE STORE KEEPING UNIT CLOSER TO THE OPERATOR AND, ONCE THE RETRIEVING IS FINISHED, THEY RETURN IT TO THE STACKER CRANE SO THAT IT CAN BE PLACED ON THE RACK: ALL THIS WITH MAXIMUM SPEED AND COMPUTERISED.

THE WHOLE SYSTEM IS COORDINATED BY THE AUTOMHA MANAGEMENT SOFTWARE (AWM), WHICH RECORDS THE COLLOCATION OF THE STORE KEEPING UNITS IN THE WAREHOUSE AND MANAGES THE OPERATIVE FLOW RATES.

THE RELIABILITY AND SPEED OF THE MINILOAD STACKER CRANES, TOGETHER WITH THE MODULARITY OF THE RACKING SYSTEM AND THE FUNCTIONALITY OF THE SOFTWARE, MAKE THESE SYSTEMS THE MOST EFFICIENT AND PRODUCTIVE SYSTEMS ON THE ENTIRE AUTOMATIC STORING AND PICKING INDUSTRY.

+ PLUS

- **COST SAVING!**
BOOSTERS ARE ENERGY SAVING MACHINES: DURING THE DECELERATION OF THE SLIDING AND LOWERING OF THE CRADLE, THE MOTORS REGENERATE ENERGY WHICH IS SENT TO THE FACTORY POWER NET. THIS LEADS TO SUBSTANTIAL SAVINGS
- **LOW NOISE LEVEL**
- **ESSENTIAL MACHINE**
THE MACHINE CONSISTS OF ESSENTIAL ELEMENTS FOR EASY IDENTIFICATION AND MAINTENANCE
- **WEIGHT OF TRANSPORTED UNIT UP TO 300KG**
WITH UNALTERED CYCLES COMPARED TO "CLASSIC MINILOADS" (FOR LIMITED DIMENSIONS OF THE WAREHOUSE)

STATE-OF-THE-ART TECHNOLOGY DOMINATES EVERY SINGLE CONSTRUCTIVE DETAIL:

GENERAL

- MODULAR CONCEPT
- AUTOMATIC INBOUND AND OUTBOUND CYCLES
- WIDE PRODUCTIVITY
- PERMANENT INVENTORY
- ELIMINATION OF ERRORS
- HIGH PERFORMANCE IN THE AVAILABLE SPACE

MACHINE

- IRON STEEL MAST, STRUCTURED TO GUIDE THE VERTICAL-RUNNING CRADLE
- INNOVATIVE LIFTING WITH A COGGED INEXTENSIBLE BELT
- RUNNING THANKS TO SYNTHETIC MATERIAL WHEELS
- TWO INDEPENDENT GROUPS WITH ELECTRONIC SYNCHRONIZED MOTORS ON TORQUE CONTROL (ACCORDING TO THE CYCLES REQUESTED)

RUNNING GUIDES

- FLOOR RUNNING RAIL AND UPPER GUIDING RAIL INTEGRATED WITH THE RACKING SYSTEM

ELECTRONICS AND CONTROL

- INFRARED PHOTOCCELL OR WIFI COMMUNICATION
- FORK OR HSD SYSTEM POSITION READING VIA ENCODER
- SLIDING AND LIFTING POSITIONS DETECTED VIA LASER SENSOR
- HYDRAULIC BUMPERS PLACED AT THE AISLE ENDS
- POWER FEEDING BY POWER BUS BAR AND VOLTAGE KEEPING BY DOUBLE COPPER BRUSH GROUPS
- COMPACT, ONBOARD AUTOMATION CONTROL PANEL, COMPLETE WITH PLC AND COMMUNICATION AND CONTROL UNITS
- SENSORS PLACED ONTO STACKER CRANE CRADLE FOR SKU CENTERING AND HEIGHT CONTROL
- SAFETY SYSTEMS IN COMPLIANCE WITH THE APPLICABLE SAFETY REGULATIONS

SYSTEM COMPLETION

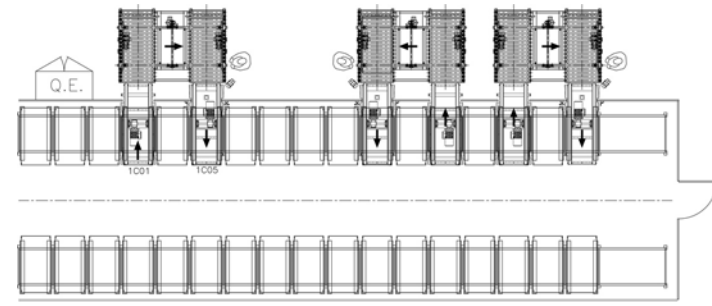
- MODULAR RACKING FOR STORAGE
- SYSTEM COVERED BY INSULATING SANDWICH PANELS
- EXTERNAL PICKING BAYS COMPLETE WITH SKU SIZE AND WEIGHT CONTROL FOR THE DIFFERENT TYPES OF CONTAINERS

SOFTWARE

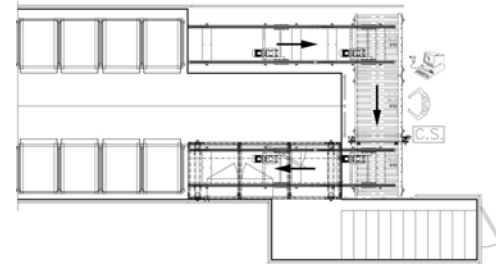
- AWM SOFTWARE FOR WAREHOUSE MANAGEMENT. AWM CAN BE CONNECTED TO THE CUSTOMER'S DIFFERENT ERP SYSTEMS (E.G. SAP, IBM...)
- OPERATOR INTERFACE CLIENT PC
- S.C.A.D.A. SYSTEM FOR COMPLETE MONITORING OF THE SYSTEM



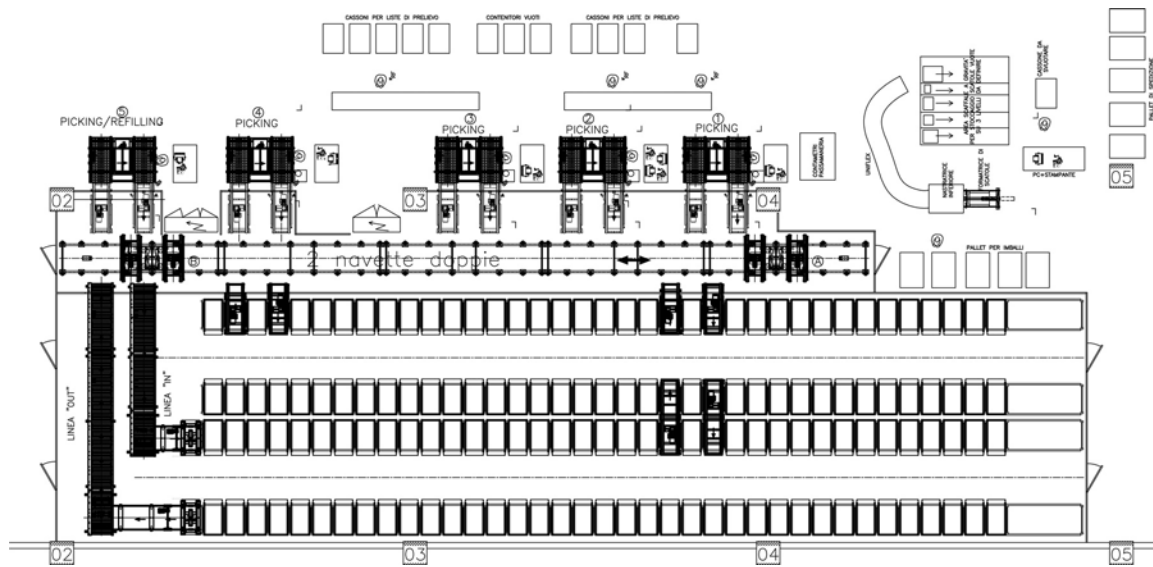
TYPES OF IN/OUT BAYS CONFIGURATION



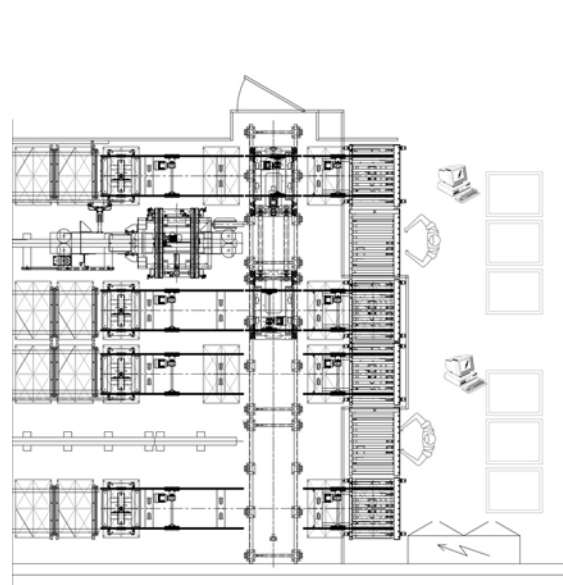
LATERAL U-SHAPE



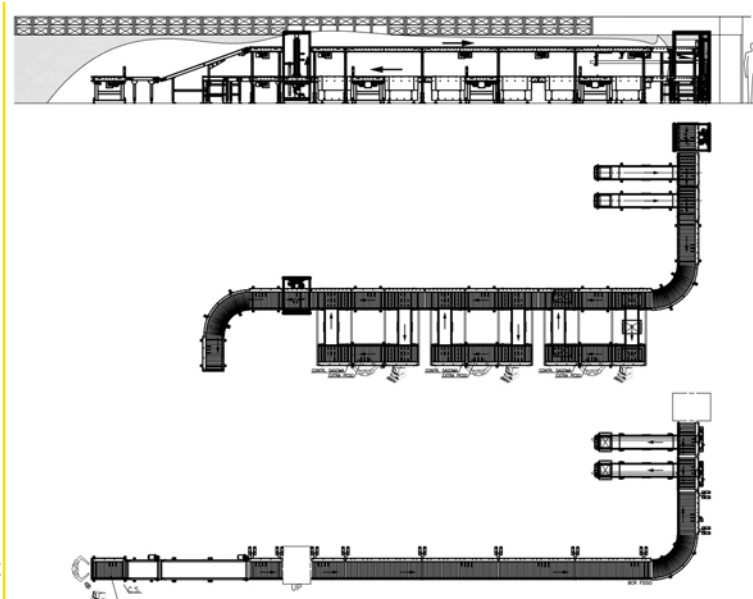
FRONTAL U-SHAPE



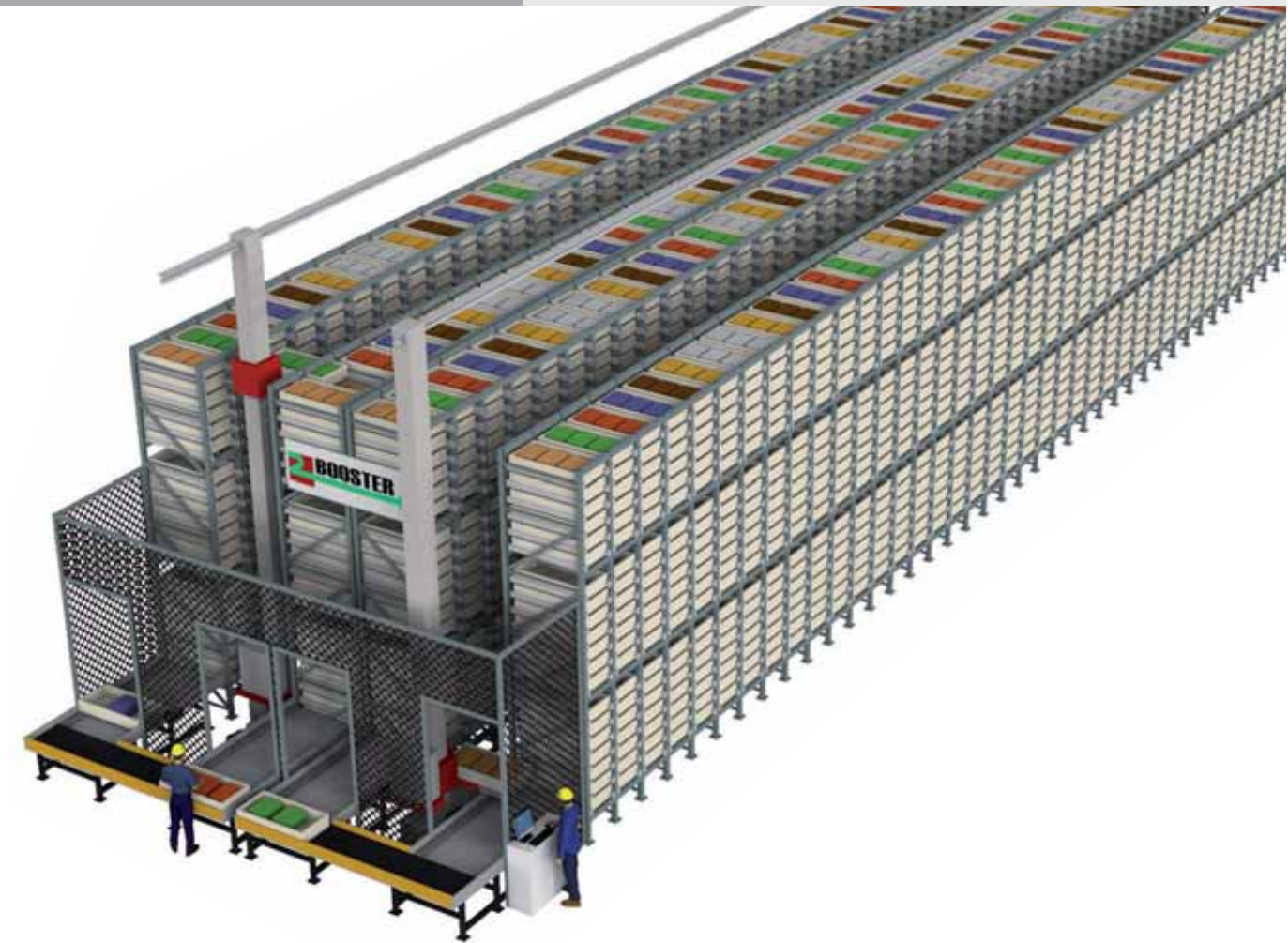
HANDLING CONVEYOR SYSTEM WITH LATERAL PICKING AND AUTOMATIC SKU CONTROL SYSTEMS



HANDLING CONVEYOR SYSTEM WITH LATERAL PICKING AND AUTOMATIC SKU CONTROL SYSTEMS



MULTI LEVEL MAIN HANDLING CONVEYOR SYSTEM



DIFFERENT TYPES OF GRIPPING SYSTEMS

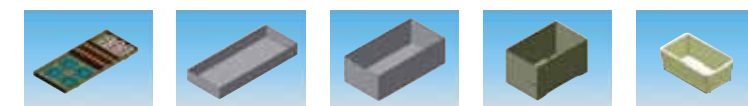
- HSD "HIGH SPEED DEVICE" HANDLING SYSTEM (FOR METALLIC AND PLASTIC TRAYS)
- TELESCOPIC FORKS UP TO DOUBLE DEEP
- TELESCOPIC SYSTEMS FOR IRREGULAR STORE KEEPING UNITS

TECHNICAL CHARACTERISTICS

- MAX CAPACITY KG 300
- MAX HEIGHT M 12
- MAX RUNNING SPEED M/1' 260
- RUNNING ACCELERATION M/S² 2
- LIFTING ACCELERATION M/S² 1.5
- MAX SPEED AND LIFTING M/MIN 60
- FORK RETRIEVING SPEED M/MIN 60

STORE KEEPING UNITS

- TRAYS OF DIFFERENT SIZES AND HEIGHTS
- CARDBOARD BOXES OF DIFFERENT SIZES AND HEIGHTS
- PLASTIC BOXES OF DIFFERENT SIZES AND HEIGHTS
- CUSTOM ON REQUEST





VIDEO
ON WWW



FIELDS OF APPLICATION:

- LOGISTIC CENTRES
- FOOD INDUSTRY
- LOW TEMPERATURE FOOD
- TEXTILE MANUFACTURING INDUSTRY
- PHARMACEUTICAL INDUSTRY
- ELECTRIC/ELECTRONIC INDUSTRY
- MECHANICAL INDUSTRY
- FASHION INDUSTRY
- COSMETICS INDUSTRY
- STORAGE FOR PRODUCTION



AUTOMATED SOLUTIONS: STORING

AUTOSTORE WAREHOUSES ALLOW AUTOMATIC STORING OF STORE KEEPING UNITS OF ANY SIZE AND WEIGHT. THE MACHINES ARE DESIGNED IN DIFFERENT SOLUTIONS FOR MAXIMUM USE OF THE AVAILABLE VOLUME IN ACCORDANCE WITH THE REQUIRED HANDLING. **AUTOSTORE** WAREHOUSES CAN BE INSTALLED BOTH IN INDUSTRIAL BUILDINGS AND IN INDEPENDENT SELF-SUPPORTING STRUCTURES.

THE STATE-OF-THE-ART TECHNOLOGY OF AUTOMHA STACKER CRANES AND THEIR EFFICIENCY IS GUARANTEED BY THE OPERATING CONTROL SYSTEMS AND ESPECIALLY BY THE COMPLETE LACK OF CABLE CONNECTIONS BETWEEN THE MOVING MACHINES AND THE MAIN CONTROL CABINET. THE RUNNING RAILS ARE INSTALLED ON ANTI-VIBRATION PLATES. POWER FEEDING OCCURS BY POWER BUS BAR AND DOUBLE COPPER BRUSH GROUPS PLACED ON THE FLOOR.

+ PLUS

- **ENERGY COST SAVING!**
AUTOSTORE MACHINES ARE ENERGY SAVING. DURING SLIDING DECELERATION AND CRADLE DESCENT, THE MOTORS REGENERATE ENERGY WHICH IS SENT TO THE FACTORY POWER NET
- **FUNCTIONAL SMOOTHNESS**

STATE-OF-THE-ART TECHNOLOGY DOMINATES EVERY SINGLE CONSTRUCTIVE DETAIL:

GENERAL

- AUTOMATIC INBOUND AND OUTBOUND CYCLES
- WIDE PRODUCTIVITY
- PERMANENT INVENTORY
- ELIMINATION OF ERRORS
- WORKING UP TO -30°C/-22°F

MACHINE

- IRON STEEL MAST, STRUCTURED TO GUIDE THE VERTICAL-RUNNING CRADLE
- LIFTING WITH STEEL ROPE AND COMMAND WINCH
- TWO INDEPENDENT GROUPS WITH ELECTRONIC SYNCHRONIZED MOTORS ON TORQUE CONTROL (ACCORDING TO THE CYCLES REQUESTED)
- THE RUNNING SYSTEM USUALLY HAS ONE MOTORISATION, A SECOND ONE IS OPTIONAL TO INCREASE ACCELERATION OR STANDARD IN STEERING STACKER CRANES

RUNNING GUIDES

- FLOOR RUNNING RAIL WITH AMORTISATION AND UPPER GUIDING RAIL INTEGRATED WITH THE RACKING SYSTEM

ELECTRONICS AND CONTROL

- INFRARED PHOTOCCELL OR WIFI COMMUNICATION
- FORK READING VIA ENCODER
- SLIDING AND LIFTING POSITIONS DETECTED VIA LASER SENSOR
- HYDRAULIC BUMPERS PLACED AT THE AISLE ENDS
- POWER FEEDING BY POWER BUS BAR AND VOLTAGE KEEPING BY DOUBLE COPPER BRUSH GROUPS ONBOARD THE MACHINE
- COMPACT, ONBOARD AUTOMATION CONTROL PANEL, COMPLETE WITH PLC AND COMMUNICATION AND CONTROL UNITS
- SAFETY SYSTEMS IN COMPLIANCE WITH THE APPLICABLE SAFETY REGULATIONS
- SENSORS PLACED ONTO STACKER CRANE CRADLE FOR SKU CENTERING AND HEIGHT CONTROL

SYSTEM COMPLETION

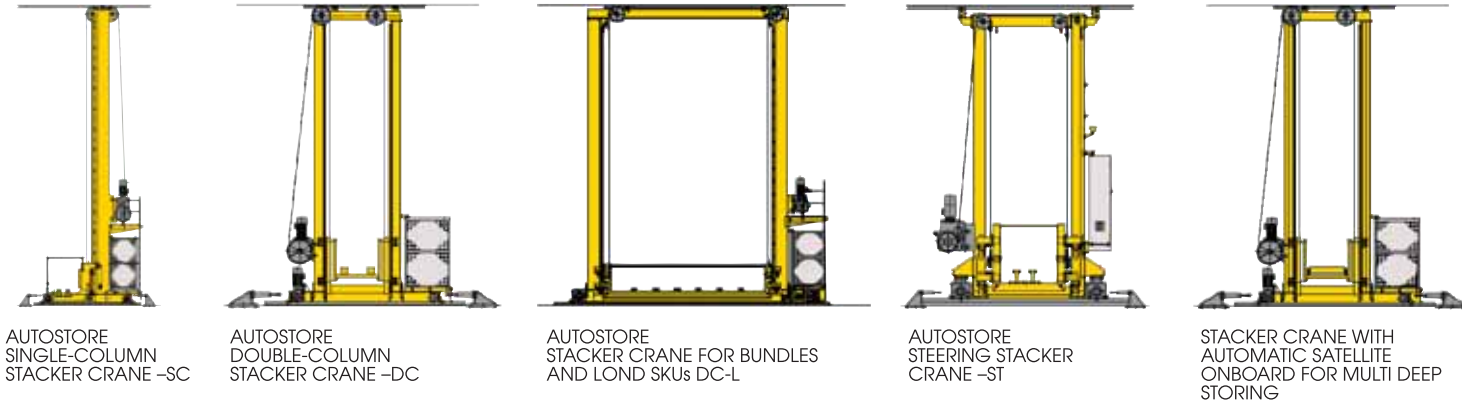
- MODULAR RACKING FOR STORAGE
- SYSTEM PERIMETER COVERED BY INSULATING SANDWICH PANELS AND COMPLETELY COVERED IN THE CASE OF SELF-SUPPORTING STRUCTURES
- EXTERNAL HANDLING SYSTEM COMPLETE WITH SKU SIZE AND WEIGHT CONTROL FOR THE DIFFERENT TYPES OF SKUs

SOFTWARE

- AWM SOFTWARE FOR WAREHOUSE MANAGEMENT. AWM CAN BE CONNECTED TO THE CUSTOMER'S DIFFERENT ERP SYSTEMS (SAP, IBM...)
- OPERATOR INTERFACE CLIENT PC
- S.C.A.D.A. SYSTEM FOR COMPLETE MONITORING OF THE SYSTEM



DIFFERENT TYPES OF MACHINE



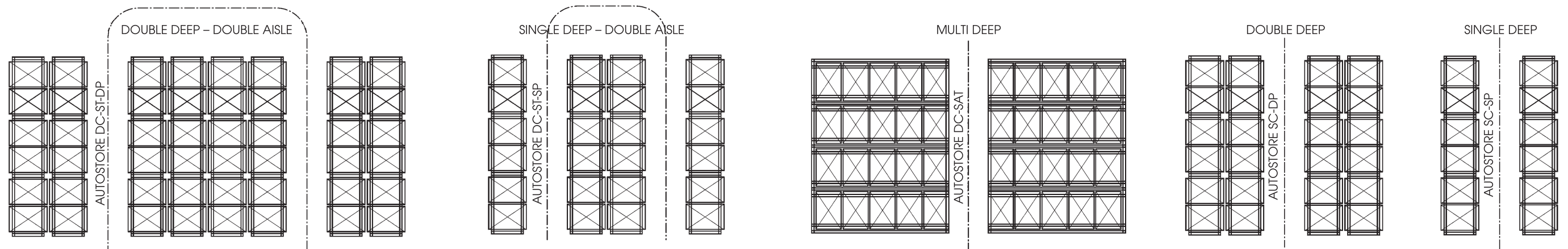
DIFFERENT TYPES OF GRIPPING SYSTEMS

- TELESCOPIC FORKS UP TO TRIPLE DEEP
- SATELLITE SYSTEMS WITH BATTERY (AUTOSATWIFI)
- SUPERCAPACITOR SATELLITE SYSTEM (SUPERCAP)

TECHNICAL CHARACTERISTICS

- MAX CAPACITY KG 3000
- MAX HEIGHT M 35
- MAX RUNNING SPEED M/1' 200
- RUNNING ACCELERATION M/S² 1.5
- LIFTING ACCELERATION M/S² 1.5
- MAX SPEED AND LIFTING M/MIN 60
- AVERAGE FORK RETRIEVING SPEED M/MIN 50

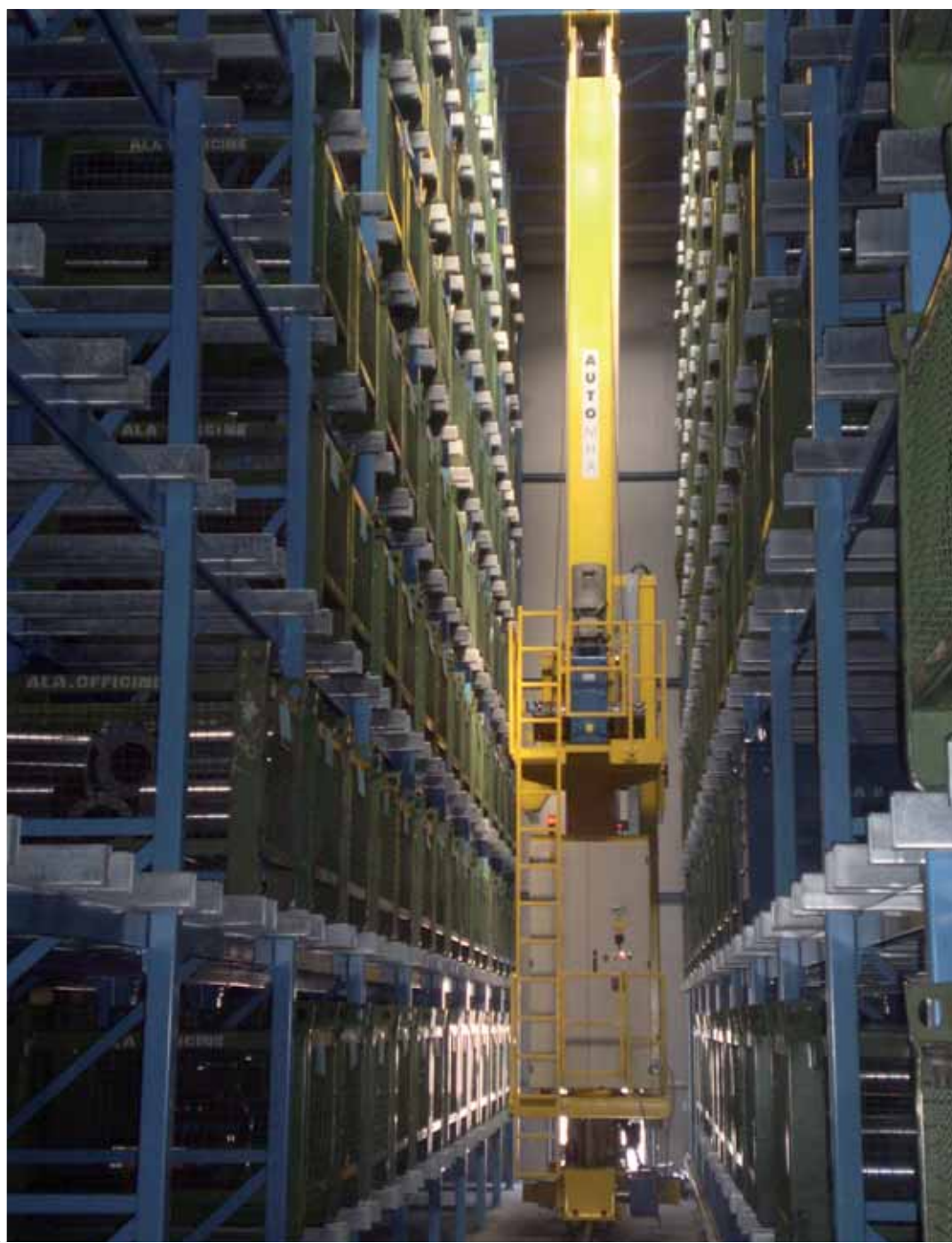
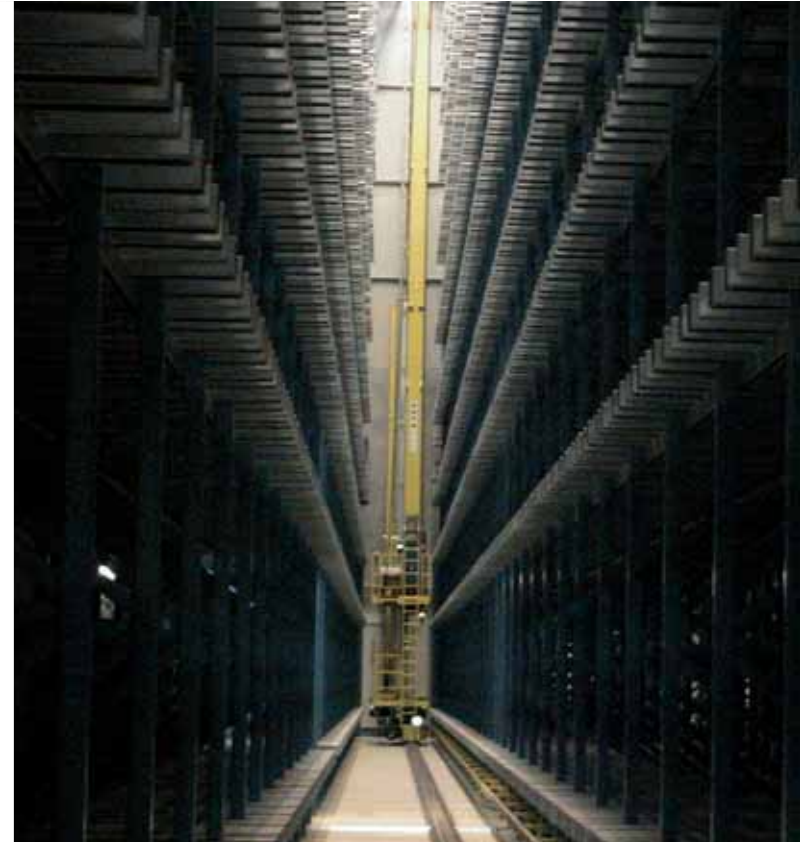
TYPES OF CONFIGURATION



STORE KEEPING UNITS

- PALLETS OF DIFFERENT SIZES INCLUDING AMERICAN AND ASIAN FORMATS
- METALLIC CONTAINERS
- METALLIC OR PLASTIC BOXES
- METALLIC TRAYS
- FRAMES
- BUNDLES AND LONG SKUs
- FABRIC ROLLS
- PAPER REELS





VIDEO ON WWW



FIELDS OF APPLICATION:

- PRODUCTION INDUSTRY
- LOGISTIC CENTRES
- FOOD INDUSTRY
- LOW TEMPERATURE FOOD
- TEXTILE MANUFACTURING INDUSTRY
- PHARMACEUTICAL INDUSTRY
- ELECTRIC/ELECTRONIC INDUSTRY
- MECHANICAL INDUSTRY
- BEVERAGE INDUSTRY
- PUBLISHING INDUSTRY

AUTOMATION STRUCTURE

EVERY AUTOMHA SYSTEM IS EQUIPPED WITH S.C.A.D.A.

SCADA

THE AUTOMHA SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM IS THE DIAGNOSTIC TOOL OF THE INTERACTIVE SYSTEM.

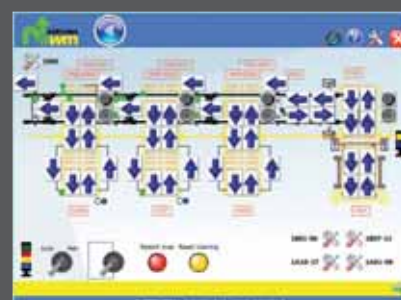
THE AUTOMHA S.C.A.D.A. SYSTEM USES STRONG INDUSTRIAL TOUCH SCREEN PANELS, WHICH ARE CONVENIENTLY PLACED IN THE STRATEGIC AREAS OF THE AUTOMATION SYSTEM. BY MEANS OF THESE PANELS, THE OPERATOR INTERACTS WITH THE AUTOMATION, TRANSPORT AND STORING SYSTEMS. ALL THE MACHINES OR SYSTEMS PRESENT AND THEIR SPECIFIC DEVICES (PHOTOCELLS, SENSORS, MOTORS, OTHER ACTUATORS, ETC.) CAN BE VIEWED ON THE DISPLAY.

THE APPLICATIONS LAYOUT INTEGRATED IN THE S.C.A.D.A. SYSTEM CAN BE MULTIPLE AND INSIDE IT IS POSSIBLE TO MOVE IN AN INTERACTIVE AND INTUITIVE WAY.

THE MACHINE STATUSES AND ANY ANOMALIES ARE SHOWN TOGETHER WITH A DESCRIPTIVE AND THOROUGH TEXT.



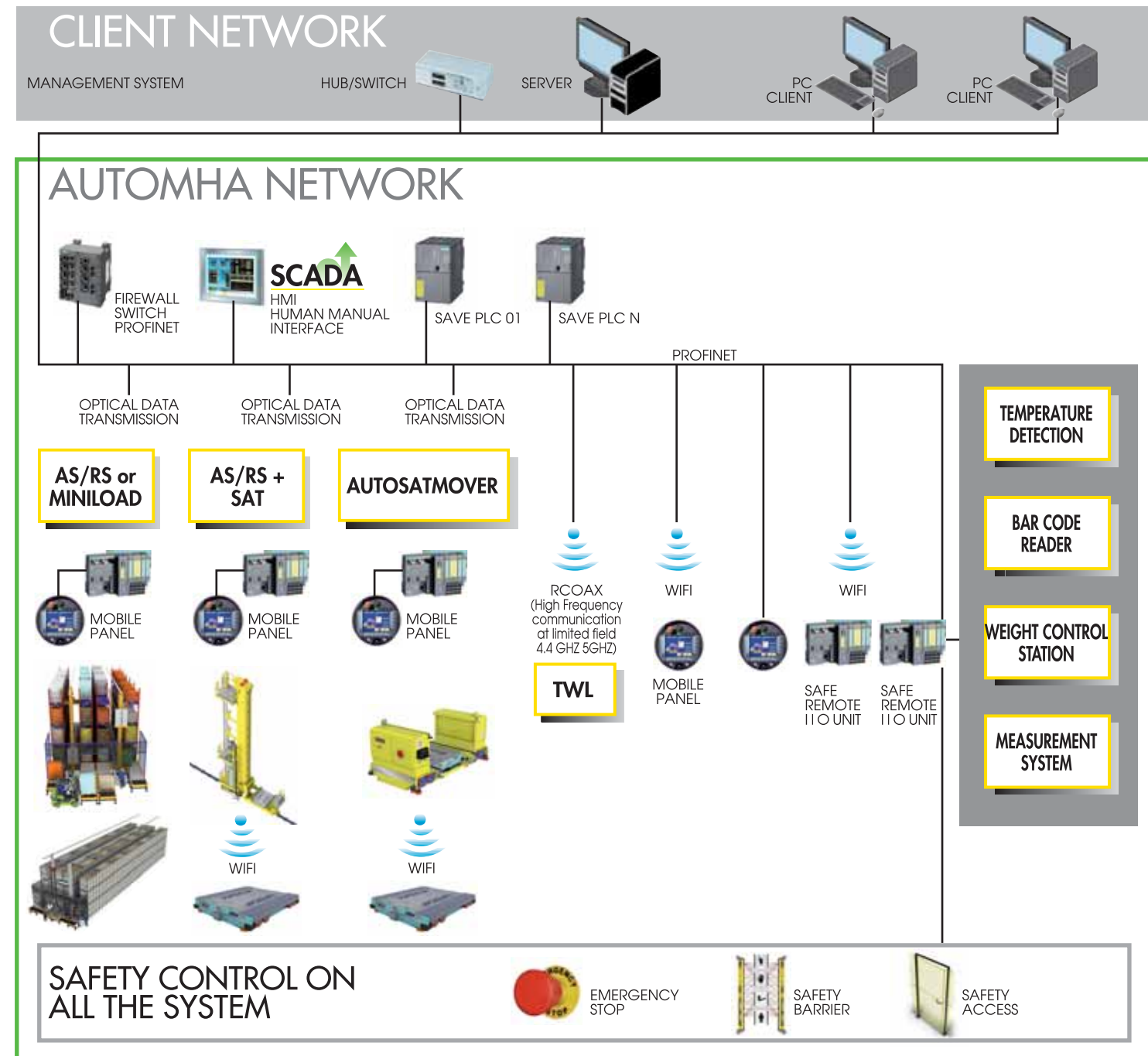
• MAIN SCREEN OF SYSTEM



• MANUAL COMMANDS OF SYSTEM



• TRACKING VIEW OF SYSTEM



• VIEW OF SYSTEM TWL DYNAMICS



• SUPERCAP DIAGNOSIS



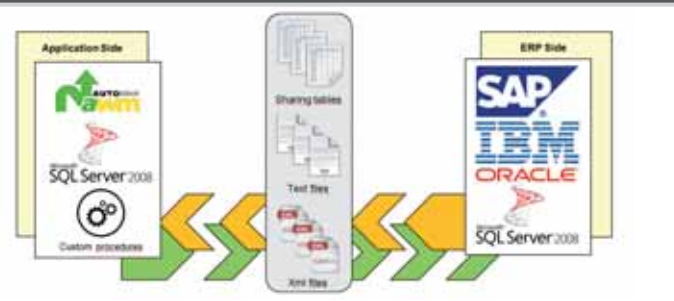
• AUTOSATMOVER DIAGNOSIS

● AWM: AUTOWAREHOUSE MANAGEMENT SOFTWARE

THE AWM PLATFORM CONSISTS OF FOUR DIFFERENT TYPES OF SOFTWARE, EACH PRODUCT SPECIFIC FOR A FIELD RELATIVE TO AUTOMATION:

- AWM: AUTOMATIC WAREHOUSE MANAGER, WAREHOUSE MANAGEMENT WEB INTERFACE
- PCM: PLC COMMUNICATION MANAGER, SOFTWARE FOR COMMUNICATION WITH PLC
- SQL PROCEDURE: MICROSOFT SQL SERVER PROCEDURE FOR WAREHOUSE LOGISTICS MANAGEMENT
- HMI SIEMENS: OPERATOR PANELS ON SWITCHBOARD

INTERFACE DIAGRAM



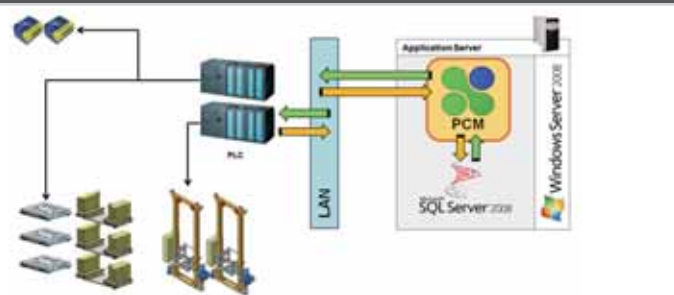
PCM – PLC COMMUNICATION MANAGER

PCM (PLC COMMUNICATION MANAGER) IS THE SOFTWARE DESIGNATED TO COMMUNICATE WITH SIEMENS PLCs; IT TRANSLATES THE TRANSFER COMMANDS AND PROCESSES TO THE DEVICES IN ROUTABLE MESSAGES ON THE TCP-IP NETWORK. THE AUTOMHA – SIEMENS COMMUNICATION AND THE PROTOCOL DEVELOPED BY OUR TECHNICIANS IS THE RESULT OF THE KNOW-HOW OBTAINED FROM MANY DIFFERENT SYSTEMS AND SITUATIONS AND THIS MAKES IT FLEXIBLE SCALABLE.

+ PLUS

- ALL PROCESSES FROM AND TOWARDS PLC ARE IMPLEMENTED VIA SQL SERVER
- HIGHLY CONFIGURABLE AND CUSTOMIZABLE IN RELATION TO THE SPECIFIC NEEDS OF EACH SYSTEM

PCM OPERATION DIAGRAM



SQL PROCEDURE

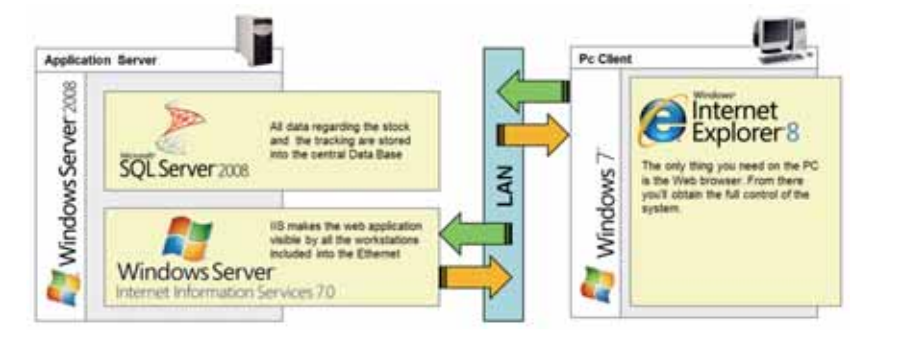
ALL THE WAREHOUSE MANAGEMENT AND THE HANDLING LOGISTICS ARE MANAGED BY MICROSOFT SQL SERVER BY MEANS OF A STRUCTURED NETWORK OF TABLES, FUNCTIONS AND PROCEDURES, ALL OF WHICH ELEMENTS HAVE THE TASK TO MANAGE THE MOVEMENT OF GOODS IN THE WAREHOUSE AND THE HANDLING LOGISTICS, THUS OPTIMISING PERFORMANCE.

AWM - AUTOMATIC WAREHOUSE MANAGER (WMS)

+ PLUS

- AWM IS WEB-BASED
- CAN BE USED VIA BROWSER
- NO SOFTWARE TO INSTALL
- CAN BE USED FROM ANY PC
- ABLE TO INTERFACE WITH ANY ERP PLATFORM (SAP, IBM, ORACLE, ETC.)
- POTENTIALLY EXPANDABLE
- EASY, FAST AND INTUITIVE INTERFACE WITH THE OPERATORS, GUIDED IN THEIR ACTIVITY

AWM STRUCTURE DIAGRAM

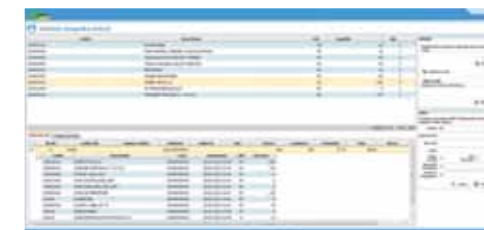


AWM FUNCTIONS

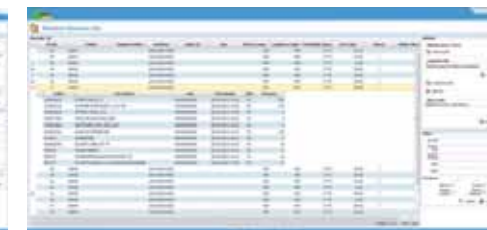
AWM IS THE TOOL THAT ALLOWS THE OPERATOR TO CONNECT WITH THE SYSTEM BY MEANS OF A SERIES OF SCREENS, IN ORDER TO MANAGE AND TO PERFORM AUTOMATIC WAREHOUSE OPERATIONS SUCH AS INSERTING, LOADING, REFILLING AND PICKING. AWM ALLOWS CONTROL AND VERIFICATION OF THE STATUS OF THE SYSTEM: IN FACT, THE OPERATOR CAN SET IN THE MANAGEMENT OF HANDLING THANKS TO SPECIFIC SCREENS PROTECTED BY A LOGIN SYSTEM, WHICH GUARANTEE A CORRECT MANAGEMENT OF THE SYSTEM EVEN IN CRITICAL SITUATIONS.



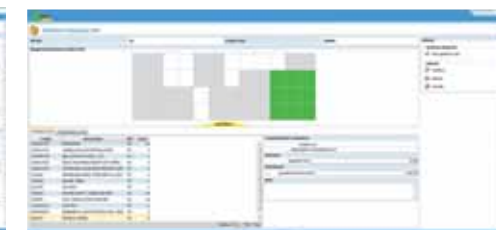
• STATIC PANEL



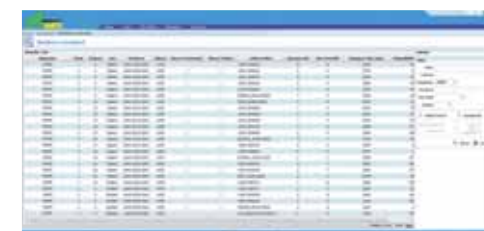
• ITEM DATA MANAGEMENT



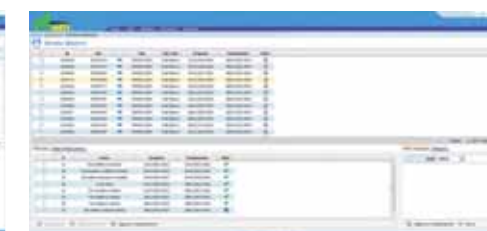
• SKU STOCK MANAGEMENT



• INTEGRATED SKU MANAGEMENT



• POSITION MANAGEMENT



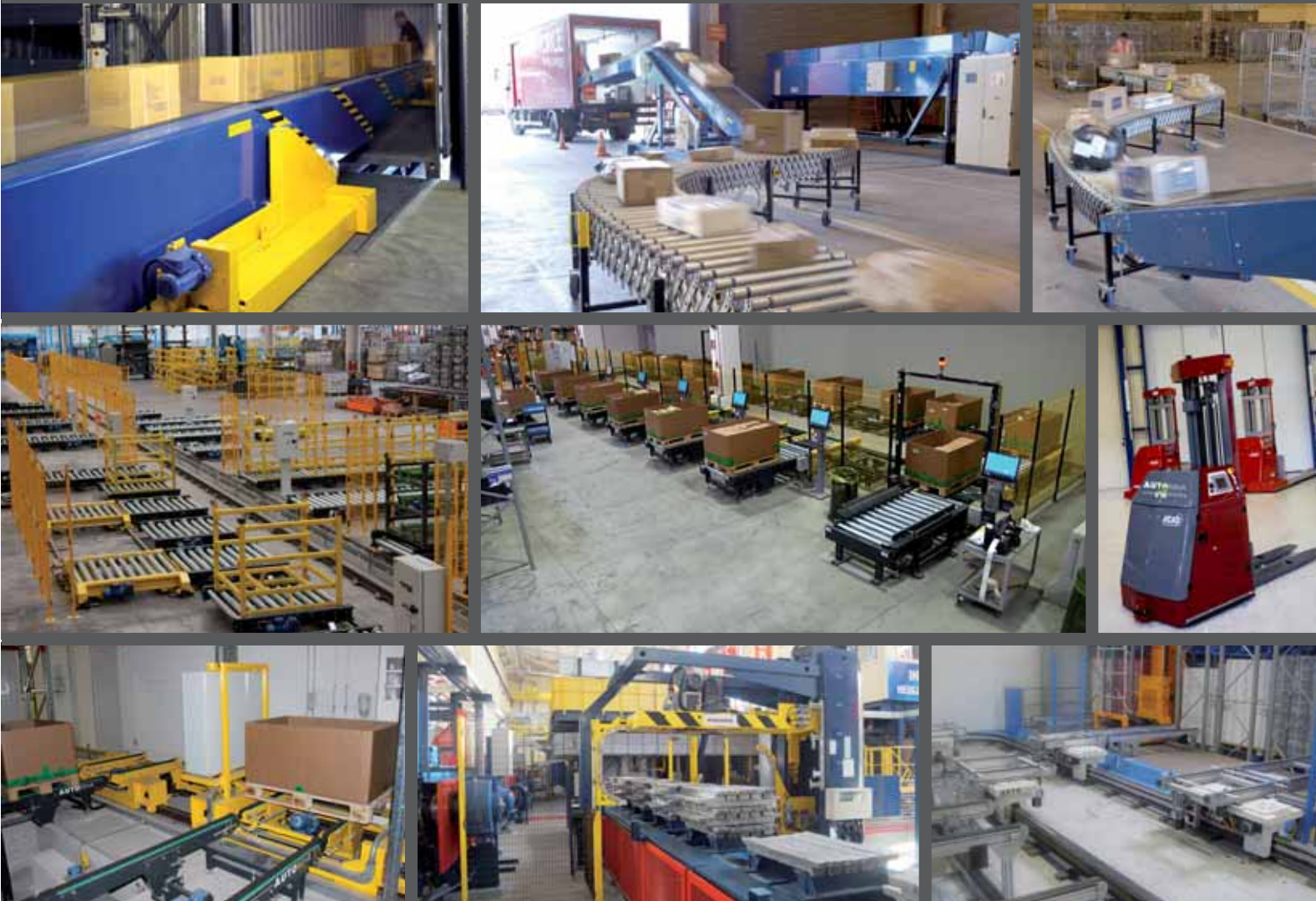
• MISSIONS SCREEN



• WITHDRAWAL MANAGEMENT

MATERIAL HANDLING

INTERNAL HANDLING SYSTEMS, AGVS, ROBOTICS



EXAMPLES OF INSTALLATIONS:



THE RIGHT GOODS, IN THE RIGHT PLACE AND AT THE RIGHT TIME. MATERIAL HANDLING IS AN UNPRODUCTIVE ASPECT FOR THE USERS BUT THE EFFICIENCY, SPEED, PUNCTUALITY AND PRACTICAL REPETITIVENESS ARE FUNDAMENTAL AND UNDENIABLE. IN THIS CONTEXT, AUTOMHA DESIGNS, PRODUCES AND INSTALLS AUTOMATED TRANSPORT SOLUTIONS – SYSTEMS FOR INTERNAL TRANSPORTATION OR USED IN AUTOMATED WAREHOUSES – CAPABLE OF INCREASING PRODUCTIVITY, WHILE REDUCING OPERATION AND LABOUR COSTS.

THE MODULES THAT FORM AUTOMHA CONVEYORS ARE DETERMINED BY MOTORIZED ROLLER, CHAIN AND BELT CONVEYOR STATIONS AND ORTHOGONAL TRANSFERRING STATIONS, SHUTTLE CARTS, LIFTS OR OTHER MACHINES CAN BE ADDED.

THE VARIOUS SECTIONS THAT FORM THE TRANSPORTATION SYSTEMS CAN BE INTEGRATED WITH FULLY AUTOMATIC STATIONS CAPABLE OF:

- IDENTIFYING THE IDENTITY OF THE STORE KEEPING UNITS VIA BAR CODE OR TAG READING
- WEIGHING
- AUTOMATICALLY CHECKING THE SIZE
- ALIGNING THE MOVING SKU_s

WITH REGARD TO THE FLOW RATE AND PRODUCTIVITY REQUIREMENTS, AUTOMHA SYSTEMS ARE ABLE TO:

- MOVE THE STORE KEEPING UNITS FROM THE DELIVERY AREAS TO THE NEXT PROCESSES
- TRANSPORT THE GOODS INSIDE THE PRODUCTION PROCESSES
- DIRECT THE GOODS FROM THE ASSEMBLY/TESTING PROCESSES TO THE PACKAGING AND SHIPMENT DEPARTMENTS
- SUPPLY THE PICKING AND PRODUCTION WORKSTATIONS WITH GOODS FROM THE WAREHOUSE, IN REAL TIME
- SUPPLY THE REFILLING STATIONS WITH GOODS
- AUTOMATICALLY COORDINATE THE PROCESS OR SHIPMENT ORDERS
- CARRY OUT PRECISE TRACEABILITY OF GOODS
- RATIONALISE AND OPTIMISE THE AREAS USED FOR MATERIAL HANDLING

STORE KEEPING UNITS

- BOXES
- PLASTIC AND METALLIC BOXES
- TRAYS
- PALLETS
- METALLIC CONTAINERS
- PERSONALISED AND SPECIFIC STORE KEEPING UNITS, WHICH CAN BE VARIOUS: TRANSPORT OF FABRIC ROLLS, BUNDLES AND LONG SKU_s (METALLIC OR PLASTIC), EXTRUSION MOULDS, FRAMES, INGOTS AND SLEEVES
- THE RANGE OF TRANSPORTABLE WEIGHTS IS RELEVANT

+ PLUS

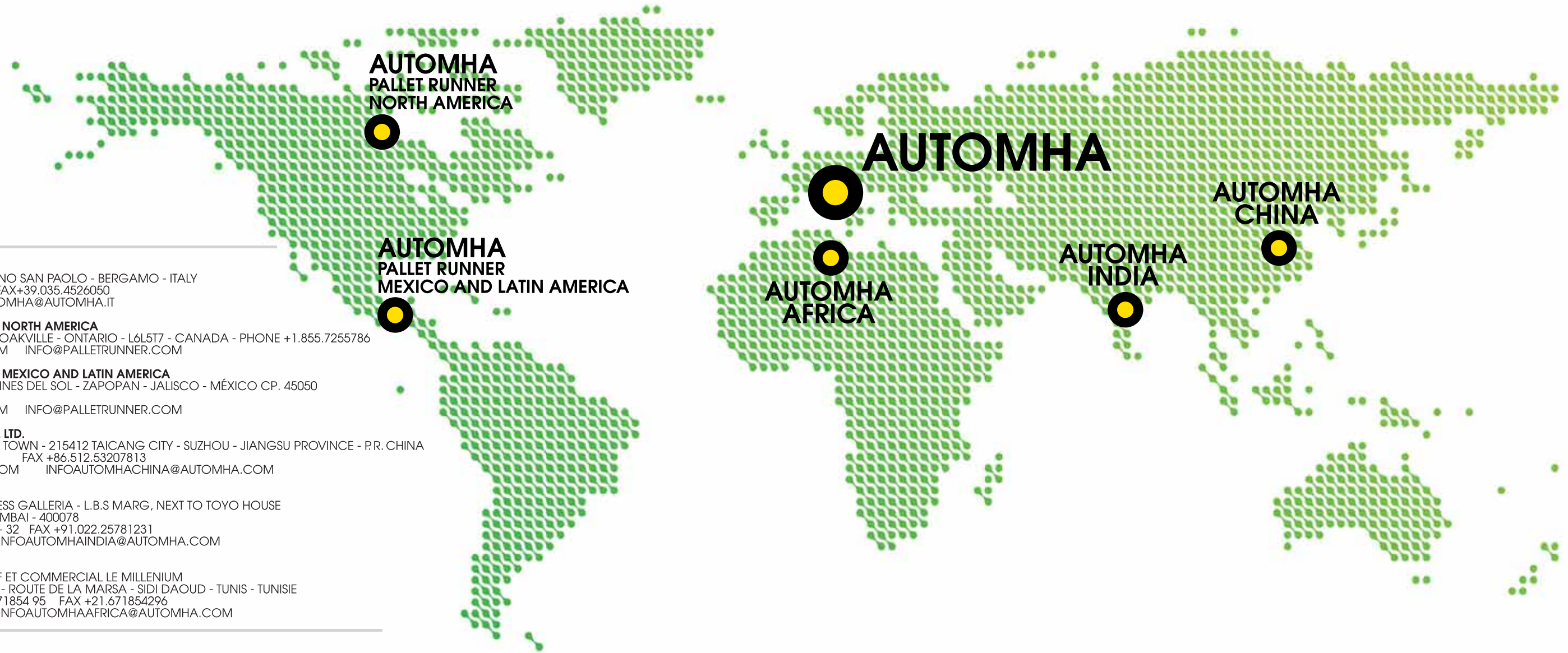
- ELEVATED OPERATION SAFETY STANDARDS AND HIGH SPEED OF FLOW RATES
- ELIMINATION OF TRAFFIC ON THE GROUND CAUSED BY FORKLIFT
- COMPLETELY TRANSPARENT SYSTEM WHICH CAN BE MANAGED IN RELATION TO SYSTEM AUTOMATION AND COMPUTERISATION CONTROL
- ATEX 2 PROJECTS
- THE RESULT IS: INCREASE OF QUALITY OF LOGISTIC OPERATIONS



VIDEO ON WWW



AUTOMHA GROUP IN THE WORLD



AUTOMHA SRL
VIA EMILIA 6 - 24052 AZZANO SAN PAOLO - BERGAMO - ITALY
PHONE +39.035.4526001 FAX+39.035.4526050
WWW.AUTOMHA.IT AUTOMHA@AUTOMHA.IT

AUTOMHA PALLET RUNNER NORTH AMERICA
1300 SOUTH SERVICE RD - OAKVILLE - ONTARIO - L6L5T7 - CANADA - PHONE +1.855.7255786
WWW.PALLETRUNNER.COM INFO@PALLETRUNNER.COM

AUTOMHA PALLET RUNNER MEXICO AND LATIN AMERICA
CHICHEN-ITZA 409 - JARDINES DEL SOL - ZAPOPAN - JALISCO - MÉXICO CP. 45050
OFICINA +52.3336277047
WWW.PALLETRUNNER.COM INFO@PALLETRUNNER.COM

AUTOMHA INDUSTRIES CO. LTD.
N. 15 SANHE ROAD - LU DU TOWN - 215412 TAICANG CITY - SUZHOU - JIANGSU PROVINCE - P.R. CHINA
PHONE +86.512.3337676 FAX +86.512.53207813
WWW.AUTOMHACHINA.COM INFOAUTOMHACHINA@AUTOMHA.COM

AUTOMHA INDIA
702, DAMJI SHAMJI BUSINESS GALLERIA - L.B.S MARG, NEXT TO TOYO HOUSE
KANJUR MARG WEST - MUMBAI - 400078
PHONE +91.022.25781231 - 32 FAX +91.022.25781231
WWW.AUTOMHA.COM INFOAUTOMHAINDIA@AUTOMHA.COM

AUTOMHA AFRICA
COMPLEXE ADMINISTRATIF ET COMMERCIAL LE MILLENIUM
BUREAU N°09 - 1ER ÉTAGE - ROUTE DE LA MARSA - SIDI DAUD - TUNIS - TUNISIE
PHONE + 21.671854 294 - 71854 95 FAX +21.671854296
WWW.AUTOMHA.COM INFOAUTOMHAAFRICA@AUTOMHA.COM

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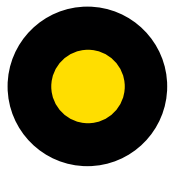
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AUTOMHA GROUP

AUTOMHA

AUTOMATIC MATERIAL HANDLING

AUTOMHA SRL

VIA EMILIA 6 - 24052 AZZANO SAN PAOLO - BERGAMO - ITALY - PHONE +39.035.4526001 FAX+39.035.4526050
WWW.AUTOMHA.IT AUTOMHA@AUTOMHA.IT



AUTOMHA GROUP

AUTOMHA PALLET RUNNER NORTH AMERICA

1300 SOUTH SERVICE RD - OAKVILLE - ONTARIO - L6L5T7 - CANADA - PHONE. +1.855.7255786
WWW.PALLETRUNNER.COM INFO@PALLETRUNNER.COM



AUTOMHA GROUP

AUTOMHA PALLET RUNNER MEXICO AND LATIN AMERICA

CHICHEN-ITZA 409 - JARDINES DEL SOL - ZAPOPAN - JALISCO - MÉXICO CP. 45050 - OFICINA +52.3336277047
WWW.PALLETRUNNER.COM INFO@PALLETRUNNER.COM



AUTOMHA INDUSTRIES CO. LTD.

N.15 SANHE ROAD - LU DU TOWN - 215412 TAICANG CITY - SUZHOU - JIANGSU PROVINCE - P.R. CHINA
PHONE +86.512.33337676 FAX +86.512.53207813
WWW.AUTOMHACHINA.COM INFOAUTOMHACHINA@AUTOMHA.COM



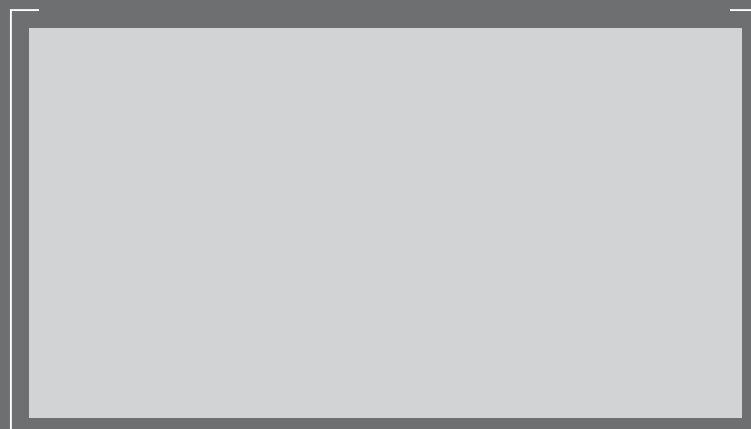
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702, DAMJI SHAMJI BUSINESS GALLERIA - L.B.S MARG, NEXT TO TOYO HOUSE - KANJUR MARG WEST - MUMBAI - 400078
PHONE +91.022.25781231 - 32 FAX +91.022.25781231
WWW.AUTOMHA.COM INFOAUTOMHAINDIA@AUTOMHA.COM



AUTOMHA AFRICA

COMPLEXE ADMINISTRATIF ET COMMERCIAL LE MILLENIUM - BUREAU N°09 - 1ÈR ÉTAGE - ROUTE DE LA MARSA - SIDI DAOUD - TUNIS - TUNISIE
PHONE + 21.671854294 - 7185495 FAX +21.671854296
WWW.AUTOMHA.COM INFOAUTOMHAAFRICA@AUTOMHA.COM



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