

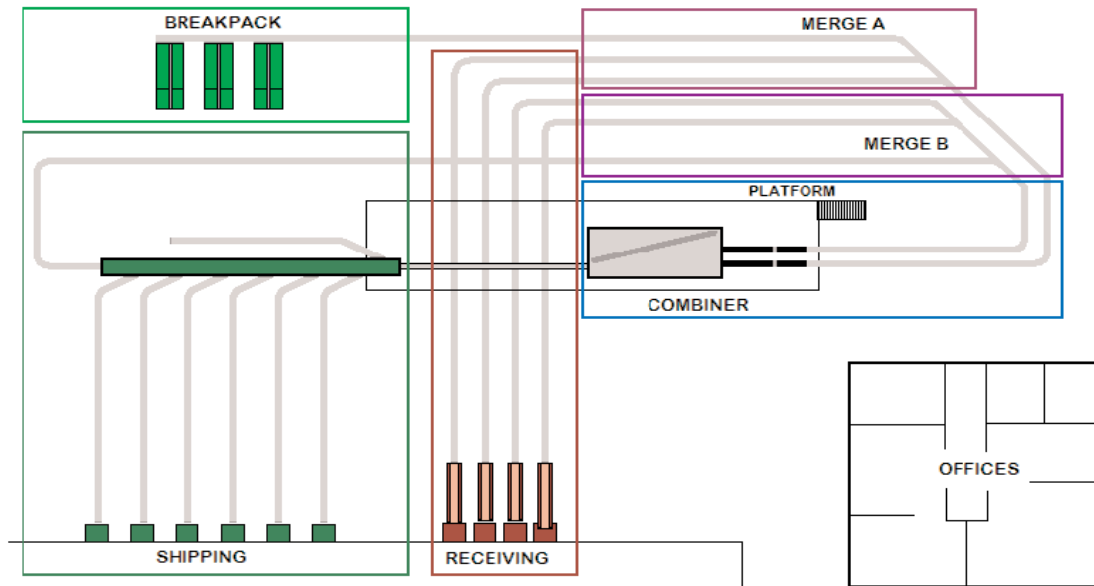


WAREHOUSE CONTROL SYSTEM

Optimize Material Flow and System Performance

W&H Systems' Warehouse Control System (WCS) software is a product of many years of research and practical experience in warehouse and distribution center automation and controls. Key capabilities of the WCS systems include relieving a customer host computer of managing a real-time material handling automation interface, maximizing system throughput and performance while utilizing the most efficient methods for pallet, case and item routing.

RECEIVING & CROSSDOCK SORTATION SYSTEM



OPERATION

W&H Systems' WCS systems are PC-based and are designed to handle all the physical aspects of a warehouse or distribution center, including material handling equipment control, stock location mapping, inter-location movement control, inter-zone routing, allocation of stock to dispatches, order management and dock door interface control, all within unlimited operator interface. Material handling equipment control includes control of cranes, trucks, conveyors, carousels, sorters and other equipment using network, radio or infrared communication links.

The WCS picking capabilities include support for various picking models, such as paper pick lists, RF terminals, goods-to-man picking robots, voice controlled and pick-to-light; support for fixed and dynamically assigned picking locations; automatic replenishment based on minimum level or future demand; picked container building to defined rules of height; weight and stock segregation; consolidation of pick requirements into waves' pick walk minimization; and configurable workload balancing.

W&H Systems' WCS systems operate as self-maintained units requiring no user interaction for file and system maintenance, providing elaborate statistical and diagnostic graphics and reports for maximum systems uptime and recommending equipment maintenance based on run-time and/or maintenance schedules.

BENEFITS

- Maximizes Throughput & Performance
- Optimizes Material Flow
- Order Management
- Diagnostic & Statistical Graphics & Reports
- Sophisticated Productivity Tracking & Planning
- Real Time Interface to material Handling Equipment
- Universal Sub-System Support
- Relieves WMS/ERP of Real Time Decisions
- One Port Real Time Connectivity to ERP & WMS
- RFID Compatible
- Easy to Use Intuitive GUI/Windows Interface



W&H SYSTEMS
INNOVATIVE PROCESSES & TECHNOLOGY SOLUTIONS

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WAREHOUSE CONTROL SYSTEM

Optimize Material Flow and System Performance

W&H WCS

Status Productivity Wave Information Carton Information Series Statistics Communication

Pick Plan

Total Hours: 15 Total Units: 400,000 Required Finish On Time Rate: 26.667 Expected Finish Time: 08:00 PM
Start Time: 05:00 AM Current Time: 0:00 AM Elapsed Time(Hours): 0.00
Total Actual Units Remaining: 234,000 Required Finish On Time Rate: 27.833

Main Power Configuration

FTE's	Qty	UPH	Total UPH
A	8	800	6,400
B	10	1,000	10,000
C	10	950	9,500
Total	28		25,900

Update

Actual Main Power

FTE's	Qty	UPH	Total UPH
A	8	500	4,000
B	10	950	9,500
C	10	950	9,500
Total	28		23,000

Update

Suggested Main Power

FTE's	Qty	UPH	Total UPH
A	8	800	6,400
B	11	1,000	11,000
C	11	960	10,560
Total	30		27,960

Using Actual Rate Update

Current Expected Rate: 26,000 Actual Rate: 22,000 Suggested Rate: 27,960
Total Expected Picks: 70,000 Total Picked: 65,000 Total Units Remaining: 234,000
Expected Hours: 19.38 Expected Hour: 18.2 Expected Hour(Not Including Elapsed Time): 17.95
Expected Finish Time: 08:23 PM Expected Finish Time: 11:12 PM Expected Finish Time: 05:57 PM

Pick Plan Pack Plan(Units) Pack Plan(Cartons)

Wave Plan Wave Status Refresh Report Close

W&H WCS

Status Productivity Wave Information Carton Information Series Statistics Communication

Picking

Picker In Progress Show only Assigned Pickers Wave: 030000001

Packing

Wave Start Time: 12:01:20:05:10:00:00AM Wave Current Time: 12:01:20:05:11:12:00AM Current Wave Time: 22 Minutes

Pick ID	Zone	Current Wave	Area Type	Expected Picking Rate	Qty Assigned	Expected Pick Duration	Current Qty Picked	% Complete	Projected Pick Duration	Pick Time Remaining Expected	Pick Time Remaining Current	Variance (Minutes)	Variance % Wave	
1	a1	0300000001	Full Case	300	410	50	320	80	78.95	50	10	20.25	-8	-9.75
2	a2	0300000001	Full Case	300	400	50	350	40	80	50	8	0	0	0
3	a3	0300000001	Full Case	300	450	50	318	132	78.67	58.4	25.85	-8.4	-9.33	
4	a4	0300000001	Full Case	300	425	50	300	117	72.47	55.4	27.35	-10.4	-12.24	
5	b1	0300000001	Full Case	300	395	75.5	350	38	88.45	75.5	7.6	0	0	
6	b2	0300000001	Full Case	300	385	77	255	80	76.62	80	21.97	-13	-16.86	
7	b3	0300000001	Full Case	300	380	100	375	125	75	97	25	3	3	
8	b4	0300000001	Full Case	300	405	81	378	81	82.2	88.2	16.2	15.98	2.8	3.08
9	c1	0300000001	Pallet	600	900	90	900	0	100	72	0	0	0	0
10	c2	0300000001	Pallet	600	950	95	750	200	78.95	50	19.2	3	3.16	
11	d1	0300000002	bottle	125	185	79.2	110	55	68.62	58.4	25.4	35	-19.2	-24.24
12	d2	0300000002	bottle	125	135	64.0	110	25	61.49	64	12	16.36	-19.2	-23.63
13	e1	0300000001	oddballs	225	300	60	240	60	60	60	10	0	0	0
14	f1	0300000001	oddballs	225	290	79.47	195	113	62.09	102.12	30.13	43.96	-22.67	-26.52

Wave Plan Wave Status Refresh Report Close

ZONE DIRECTED PICK AND PASS

Zone Directed Pick and Pass is a software package that directs customer orders throughout the distribution center for picking product where it is stored. This package allows the work to be brought to the pickers/packers at the storage and picking locations. Benefits include quicker order turning times and more efficient picking.

WAVE CREATION

Wave Creation is a software package that optimizes the picking and sorting by creating waves using custom algorithms, tailored for the customers' business need and product movement profiles. W&H creates the most efficient way to pick the days work and optimizes sorting of the product

WIRELESS MANIFESTING

Wireless Manifesting uses the newest technology in wireless narrow band RF scanners, with displays, to allow the distribution center personnel to keep track of the location and contents of individual cartons or shipping trailers. Periodic audits of outbound or inbound deliveries can be performed routinely to ensure shipment integrity. Audits of carton contents can also be performed. Quick and efficient carton contents or trailer contents allow the DC to have a higher degree of accuracy.

RETURNS

Our returns processing software allows the customer to process returned product quickly and efficiently, whether the returns are to be re-stocked in the DC or returned to the vendor. Returns are a growing part of every business – quick processing of the returns results in the found revenue and cast flow.

ENERGY MANAGEMENT

The Energy Management program provides power (and cost) savings to the DC by running off areas of the conveyor system when areas become inactive. Power companies often provide financial assistance to the DC when this program is implemented.

PREVENTIVE MAINTENANCE PACKAGE

The Preventive Maintenance software package allows the maintenance departments' complete flexibility in scheduling PMs, tracking component maintenance history and ordering spare parts. This package is capable of scheduling and tracking PM activity on everything in the facility, from boilers to conveyors to HVAC. There are no surprises to the maintenance staff when using the features of the PM Package



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