



Chicagoland Chapter Material Handling & Management Society

RULES OF THUMB FOR WAREHOUSING & DISTRIBUTION

EQUIPMENT COSTS

HANDLING EQUIPMENT

ELECTRIC TRUCKS (with battery & charger)

Walkie Pallet Jack	\$ 5,500 to \$ 7,500
Rider Tow Tractor	\$ 7,000/unit
Rider Pallet Jack	\$ 7,500 to \$ 9,500
Order Selector Truck	\$ 19,000 to \$ 24,000
Order Selector Truck with Wire Guidance	\$ 24,000 to \$29,000
Counterbalanced Truck	\$ 21,000 to \$ 29,000
Narrow Aisle Reach Truck	\$ 25,000 to \$ 30,000
Double Deep Reach Truck	\$ 28,000 to \$ 33,000
Narrow Aisle, Swing Reach Truck	\$ 60,000/unit
Turret Truck (Man-Up)	\$ 65,000 to \$100,000+
Turret Truck (Man-Down)	\$ 55,000 to \$ 90,000+
Swing Mast Truck	\$ 60,000 to \$ 80,000
Battery	\$1,800 to \$3,000
Charger	\$3,100 to \$3,500

WIRE GUIDANCE SYSTEMS

Cut, Lay Wire, Seal, Incl. Line Driver (per linear ft.)	\$4 to \$6
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PROPANE TRUCKS

Counterbalanced	\$13,000 to \$18,000
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MANUAL PALLET JACK

Standard 48" L x 27" W	\$400 to \$900
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LIFT TRUCK OPTIONS

Carton Clamp	\$ 7,000 to \$ 9,000
Paper Roll Clamp	\$ 8,000 to \$10,000
Slip Sheet - Push/Pull	\$ 6,000 to \$ 8,000

CONVEYOR (Nominal 24" wide)

Live Roller (linear ft.)	\$175 to \$275
Zero Pressure Accumulation (linear ft.)	\$200 to \$300
Belt (linear ft.)	\$130 to \$180
Gravity Roller/Skate (linear ft.)	\$25 to \$50

DOCK EQUIPMENT

DOCK LEVELERS

Mechanical Leveler (ea.) (25,000 #)	\$ 3,000 to \$ 6,500
Hydraulic Leveler (ea.) (25,000 #)	\$ 5,000 to \$ 8,000

EQUIPMENT COSTS

SEALS, SHELTERS & RESTRAINTS

Standard Door Seal (ea.)	\$ 1,000 to \$ 1,500
Standard Door Shelter (ea.)	\$ 1,200 to \$ 4,800
Semi-Automatic Truck Restraint (ea.)	\$ 3,400 to \$ 4,700

STORAGE EQUIPMENT

PALLET RACK (Cost Per Pallet Position)

Standard Selective Pallet Rack	\$ 30 to \$ 50
Double Deep Pallet Rack	\$ 40 to \$ 55
Drive-in/Thru Pallet Rack (3 Deep)	\$ 60 to \$ 80
Drive-Thru Pallet Rack (4+ Deep)	\$ 50 to \$ 70
Push Back Pallet Rack (2 Deep)	\$ 90 to \$110
Push Back Pallet Rack (3 Deep)	\$125 to \$135
Push Back Pallet Rack (4 Deep)	\$145 to \$155
Gravity Flow Pallet Rack	\$250 to \$350
Carton Flow Racks (10 ft deep, per pallet)	\$150

PALLET RACK OPTIONS

Wire Deck Sections (each pallet)	\$14 to \$36
Pallet Supports (per pair)	\$12 to \$25

CANTILEVER RACK

Single-sided Cantilever 8'0"W x 16'0"H (eight sets of arms)	\$1,050 to \$1,250
Double-sided Cantilever 8'0"W x 16'0"H (sixteen sets of arms)	\$1,550 to \$1,750

SHELVING & BULK RACK

Open Type Shelving - light to medium duty	\$ 75 to \$150
Open Type Shelving - heavy duty	\$175 to \$350
Closed Type Shelving - light to medium duty	\$110 to \$220
Closed Type shelving - heavy duty	\$240 to \$480
Heavy Duty Shelving (per pallet)	\$175

WIDE SPAN STORAGE RACK

Wide Span Unit (particle board deck)	\$350 to \$450
Wide Span Unit (corrugated steel deck)	\$450 to \$550
Wide Span Unit (wire deck)	\$550 to \$650

CARTON FLOW RACK

Carton Flow Unit (5'W x 10'D x 8'H)	\$1,000 to \$1,500
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EQUIPMENT COSTS (cont.)**MEZZANINES & STORAGE PLATFORMS**

Mezzanine (per sq. ft. 3/4" tongue & groove)	\$12 to \$16
Mezzanine (per sq. ft. perforated steel plank deck)	\$13 to \$17
Mezzanine (per sq. ft. solid steel plank deck)	\$14 to \$18
Stair & Landing (each)	\$2,500 to \$3,500

SECURITY & ENCLOSURES**WIRE SECURITY PARTITIONS**

8' High Wire Partition (per linear ft)	\$12 to \$16
10' High Wire Partition (per linear ft)	\$15 to \$19
12' High Wire Partition	\$17 to \$21
Wire Roof (per sq. ft.)	\$2 to \$3
Single Swing Doors (each)	\$150 to \$250
Double Swing Doors (each set)	\$350 to \$475
Slide Door (each)	\$250 to \$550

IN PLANT OFFICES

3" Thick 4' x 8' Wall Panel Systems	\$50 to \$75
Corrugated Steel Roof Deck & Acoustical Tile Ceiling (sq. ft.)	\$6 to \$8
Doors (steel or solid core wood)	\$300 to \$400
Windows (factory glazed)	\$100 to \$125

STORAGE STANDARDS

PALLET STORAGE (Sq. Ft./Pallet Based on Ceiling Ht.)	10-25'	26-30'	31-40'	41-60'
Floor Stack or Stacking Frames	8-15	N/A	N/A	N/A
Counterbalance Lift Truck (12' aisles)	12-32	N/A	N/A	N/A
Narrow Aisle Reach Truck (deep reach & push back with 9' aisles)	9-22	6-8	N/A	N/A
Drive-in or Drive-thru Rack	8-20	N/A	N/A	N/A
VNA Turret Truck (man up or down 6' aisles)	7-8	5-6	4-5	N/A
Hybrid Truck Stacker Crane (6' aisles)	7-8	5-6	4-5	3-4

CASE/PIECE STORAGE (Based on 1' x 1' x 1' Case)

	W.	D.	H.	=	# Cases
Static Shelving Bay	3'	2'	7'	=	21
Heavy Duty Shelving Bay	8'	2'	7'	=	96
Case Flow Rack Bay	5'	10'	8'	=	225

THROUGHPUT STANDARDS**PALLET MOVEMENT RATE**

Counterbalanced Lift Truck	10-15 pallets/hr
Narrow Aisle Reach Truck	10-12 pallets/hr
VNA Turret Truck (man-down)	15-25 pallets/hr
VNA Turret Truck (man-up)	13-23 pallets/hr
Hybrid Truck Stacker Crane	24-30 pallet/hr

TRUCK LOADING RATES

Manual Hand Pallet Jack	6-12 pallets/hr
Power Pallet Jack	20-30 pallets/hr
Counterbalanced Fork Truck	30-50 pallets/hr
Counterbalanced Clamp Truck	30-50 pallets/hr
Counterbalanced Push/Pull Truck	25-40 pallets/hr
Direct Truck Loading Conveyor	250-400 cases/hr

SHELVING OR FLOW RACK

Manual Pick Cart	25-55 lines/hr
Pick to Tote or Carton on Conveyor	100-250 lines/hr
Pick to Belt	200-350 lines/hr

CONVEYOR RATES (maximum rate)

Manual Sorter	25 cases/min
Diverter Arm Sorter	25 cases/min
Pusher or Puller Sorter	40 cases/min
Pop-up Chain Sorter	70 cases/min
Pop-up Wheel Sorter	100 cases/min
Slat with Pusher Shoes Sorter	150 cases/min
Tilt Tray Chain Sorter	300 cases/min
Standard Conveyor - Normal Speed	40-120 FPM
Modified Standard Conveyor - High Speed	120-300 FPM
Incline/Decline Belt Conveyor Slope	16-22 degrees

AUTOMATIC GUIDED VEHICLE SYSTEMS (AGVS)

Manufacturing Material Movement	5-9 loads/hr
Distribution Center Material Movement	6-10 loads/hr
Flexible Manufacturing System (FMS)	10-15 loads/hr

AUTOMATED STORAGE/RETRIEVAL SYSTEM (AS/RS)

Unit-Load Stacker Crane (per aisle)	25-35 pallets/hr
Carousels (3 modules/pod)	130-320 picks/hr
Mini-Load System (per aisle)	25-45 picks/hr
Automatic Picking Machine to Tote	1800 pieces/hr