

WAREHOUSE SYSTEM TECHNOLOGY

Save costs, increase warehouse space with STEINBOCK WM-13 "Mini Depotlift"

Storage space is expensive and the costs are forever increasing. Whether your customer is planning a new warehouse, or remodeling the present one, you can increase the companies profits by optimizing the storage facilities.

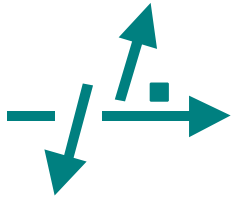
Remember when offering the WM-13, every square foot of floor area saved, amounts to many additional cubic feet of storage space. All loads are stored within easy view of the operator.

Should you consider planning a warehouse facility, please call (407) 677 - 0040 or fax (407) 678 - 0273 **PMH** for assistance. We'll gladly furnish you with the information and layout.

Basic Information

STEINBOCK WM-13 Aisle requirements

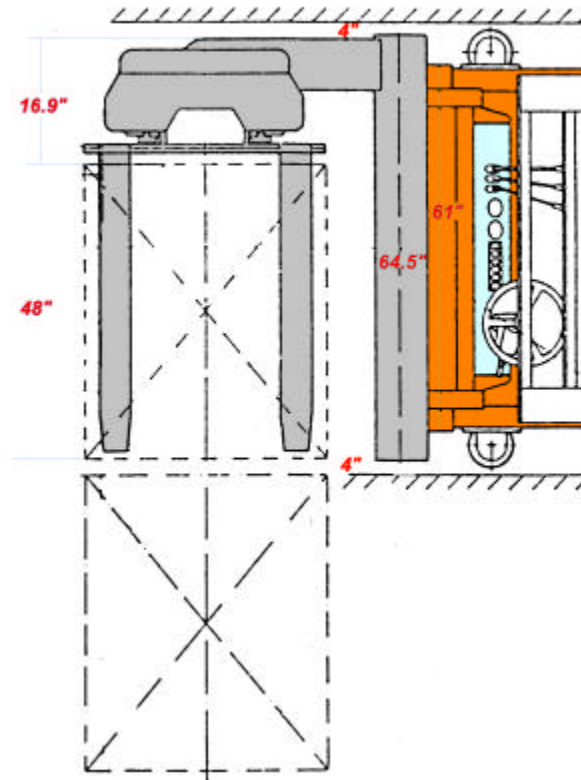
Pallet (samples)	Sideshift stroke	Pallet Insertion length	Aisle (guided) required	Aisle unguided required
48 x 40	52.7"	65	48"	73"
	44.9"	57	40"	65"
48 x 42	52.7"	65	48"	73"
	48.8"	59	42"	67"
48 x 48	52.7"	65	48"	73"
	52.7"	65	48"	73"
42 x 40	48.8"	59	42"	67"
	44.9"	57	40"	65"
40 x 36	44.9"	57	40"	65"
	40.9"	53	36"	61"
60 x 60	64.5"	77	60"	85"

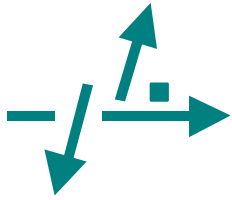


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Vehicle frame sizes	49"	54"	58"	61"	65"
Coincide with					
Attachment frame sizes	44.9	48.8	52.7	56.7	60.6
	64.5	68.5	72.4	76.3	

(bold numbers) indicate vehicle setup for 48" pallet





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Load Insertion Size	Attachment Frame Width	Load + Mast & Forks	Vehicle Chassis Width	Aisle Requirement	Recommended Guided Aisle
30"	44.9"	46.9"	49"	54.9"	55"
32"	48.8"	48.9"	49"	56.9"	57"
36"	52.7"	52.9"	49" or 54"	60.9"	61"
40"	56.7"	56.9"	54" or 58"	64.9"	65"
42"	60.6"	58.9"	58" or 61"	68.6"	68.5"
48"	64.5"	64.9"	61"	72.9"	73"
50"	68.5"	66.9"	65"	74.9"	75"
56"	72.4"	72.9"	65"	80.9"	81"
60"	76.3"	76.9"	65"	84.9"	85"

The recommended intersecting aisle for a WM-13 with a 48 x 48 load is 11' (aisle used to enter the working aisle)

Working aisle width is defined as clear space in which the vehicle will travel. The dimensions are normally between loads that overhang their respective racks to create a clear path.

Please review the rack check sheet and fill in all dimensions as indicated:

In brief: Warehouse facility: planned existing

Dimensions of warehouse length _____ width _____ height _____

Amount of loads to store _____ Existing aisle width _____

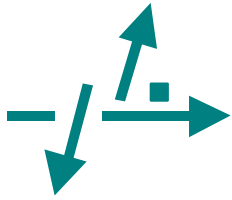
Maximum weight of load _____ (please verify the actual weight)

Overall dimensions of load length _____ width _____ height _____

(Note the dimension should include pallet and MAX. load overhang)

Pallet rack top beam height _____ Available height of warehouse _____

(Please note overhead obstructions)

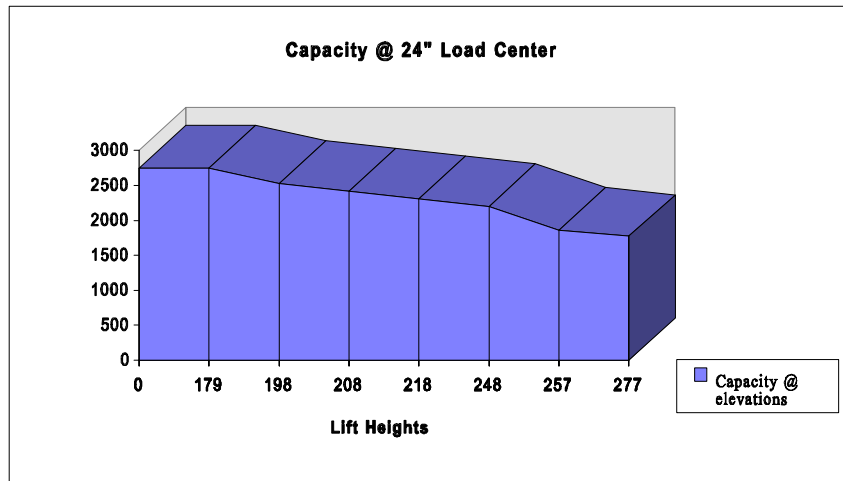


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General Information

Load Weight: 2750 lbs
 Load Center: 24"

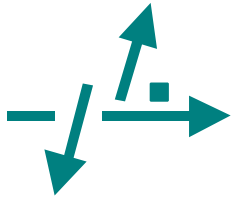
capacity cutoffs	2750 lbs	179"	with 24" load center
	2530	198"	
	2420	208"	



2310	218"
2200	248"
1870	257"
1760	277"

Floor loading and requirements:

The warehouse floor should be smooth industrial type flooring with a minimum floor load capacity of 250 lbs per sq. ft. 4" reinforced concrete with 2000 P.S.I. Floors should be impervious to oils and greases.



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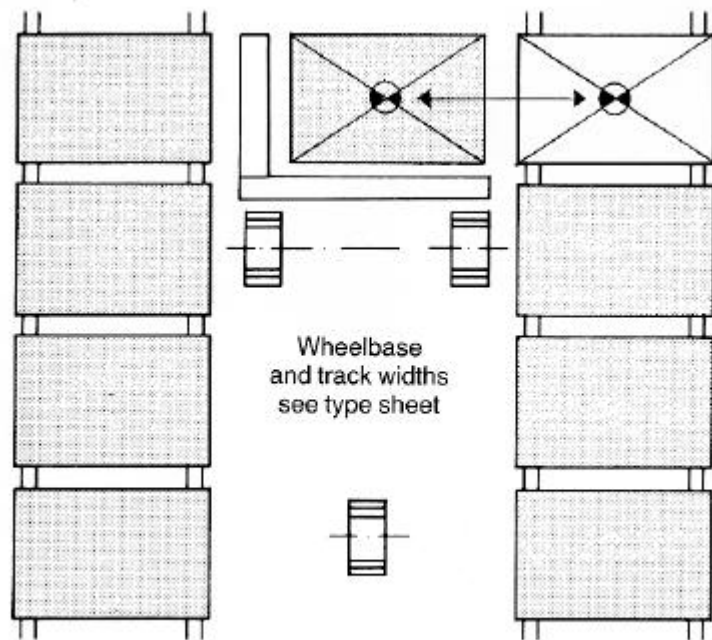
Vehicle weight 10,940 lbs (incl. battery of 2,100)	Axle load	Wheel Pressure load in aisle	Wheel Pressure load in rack
Steering	4,204 lbs	4,204 lbs	4,204 lbs
Front wheels	6,735 lbs	left 3,356 lbs right 3,379 lbs	left 1,086 lbs right 5,649 lbs
Vehicle weight 13,869 lbs with load and 175 lbs driver			
Steering	2,744 lbs	2,744 lbs	2,744 lbs
Front wheels	11,125 lbs	left 5,544 lbs right 5,580 lbs	left 1,793 lbs right 9,332 lbs

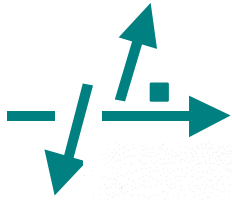
1) Load located at right angles to the direction of travel, jib arm left and load right. Different wheel pressures occur on the front wheels due to the asymmetrical configuration of the turret attachment.

2) Wheel pressures at the pallet location based on load size of 48"

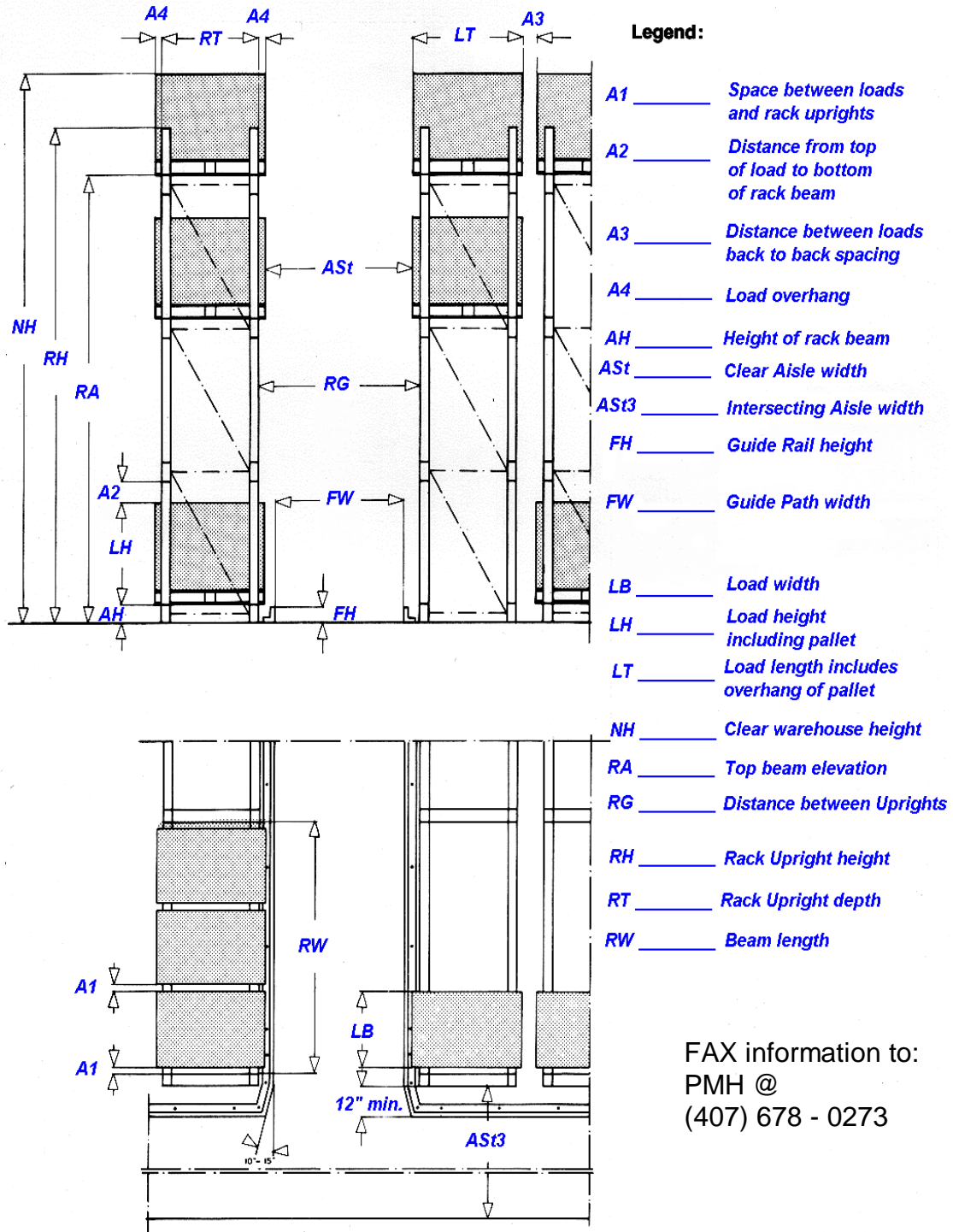
3) Above wheel pressure gives the maximum specific floor load (static) of approx. 950 lbs/sq inch

For floor load rating, the figures should be multiplied by a "dynamic load factor" of 1.4



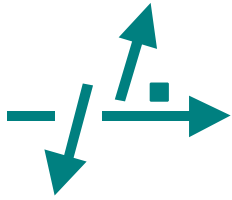


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FAX information to:
 PMH @
 (407) 678 - 0273

Technical data subject to change LS 2/3/81



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Application Questionnaire

Please answer the following questions to determine WM-13 vehicle parameters:

Short description of current transportation and handling method.

A. Load Unit information (Pallet)

Type of load: _____
(eg. loose / stabile / wrapped / etc.)

Loads stored on:

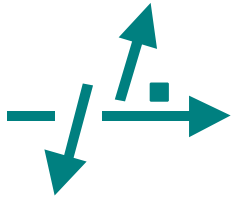
* please do not include the load dimensions at this time

- Pallet length _____ width _____ height _____
- Skid length _____ width _____ height _____
- Container length _____ width _____ height _____

Do you intend to handle pallets, skids, or containers of different sizes?

- Yes _____
- No _____

If yes please list max. and minimum sizes



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Will loads be handled by inserting its length into the rack opening (width of pallet faces aisle)

or

Will loads be handled by inserting its width into the rack opening (load length faces aisle - only possible with four way entry pallet, skid, or container)

Does the product overhang the pallet, skid, or container YES
 NO

If larger, what is the overhang front & rear _____
sides _____

Please indicate if the loads are smaller or equal or in size to the pallet

Smaller
Equal

Desired aisle size _____ (minimum aisle 25" + load insertion length)

Smaller aisles available utilizing WD & WA model vehicles.

B. Load movements and length of workday

Amount of pallets moved during day _____ / # _____ of shift cycles

Length of workday _____ hrs

Length of shift _____ hrs

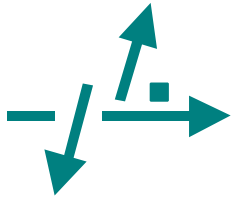
Loads received per shift _____

Loads shipped per shift _____

Average distance to storage location _____

Average lifting height _____

(Distance from entry of warehouse to center aisle add half the distance of working aisle length)



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Can loading and unloading be combined? Yes

No

Will inventory control software be utilized? Yes

No

C. Storage Area

Desired lift height _____

Highest shelf level (top beam) _____

Usable stacking height (overall clear height of warehouse) _____

Height and location of other fixed building obstructions if applicable:

D. Information about racks

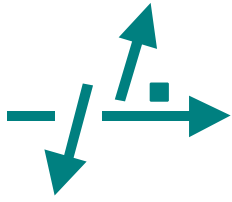
Warehouse dimensions existing _____ length _____ width

or planned _____ length _____ width

Rack dimensions existing _____ length _____ width

or planned _____ length _____ width

(please furnish brief sketch or layout)



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Rack Structure:

Height of Upright frame _____

Top Beam elevation _____

No. of storage levels _____

Clear beam span _____

Clear shelf height _____

No. of pallets per bay _____

Clearance between
pallets / rack upright _____

Aisle width between loads:

current _____ planned _____

Aisle width between rack uprights

current _____ planned _____

E. Guide Rails

Existing application

Yes

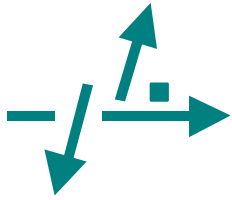
No

Recommend guide rails as per attached sketch

Remember lowest load must be raised to accommodated guide rails

Wire guided application

Recommended wire guide path and layout as per sample sketch



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F. Other information

Door openings to be negotiated _____ height x _____ width

Environment conditions

Cooler				temp
Freezer				temp
Wet storage				
Dust conditions				
Abrasive material				
Flammable goods				

G. Required Equipment

Number of vehicles _____

Battery AH _____

Number of Batteries _____

Multiple shift _____

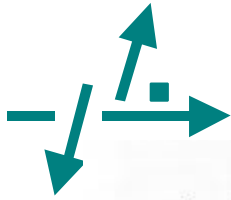
change batteries _____

Charge Input voltage _____

Single phase or Three phase _____

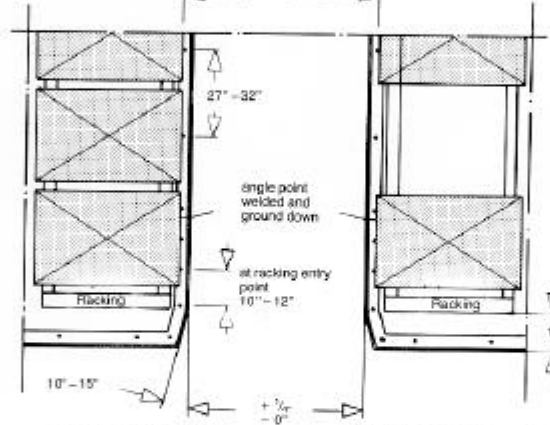
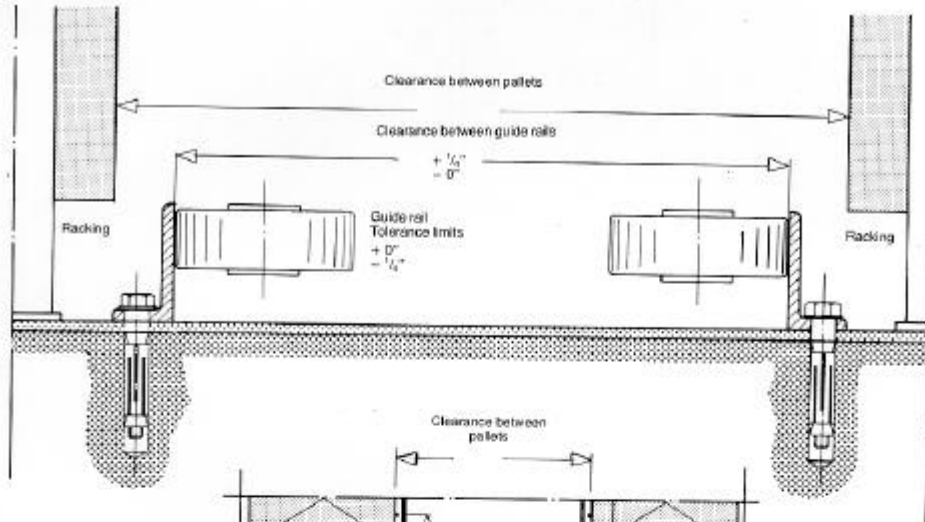
H. Optional Equipment

- | | | |
|------------------------------------|------------------------------|-----------------------------|
| Light optical load alignment | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Safety lift limitations w/override | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Work lights | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Operator compartment light | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Mirror | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| End of aisle slowdown / stop | <input type="checkbox"/> YES | <input type="checkbox"/> NO |



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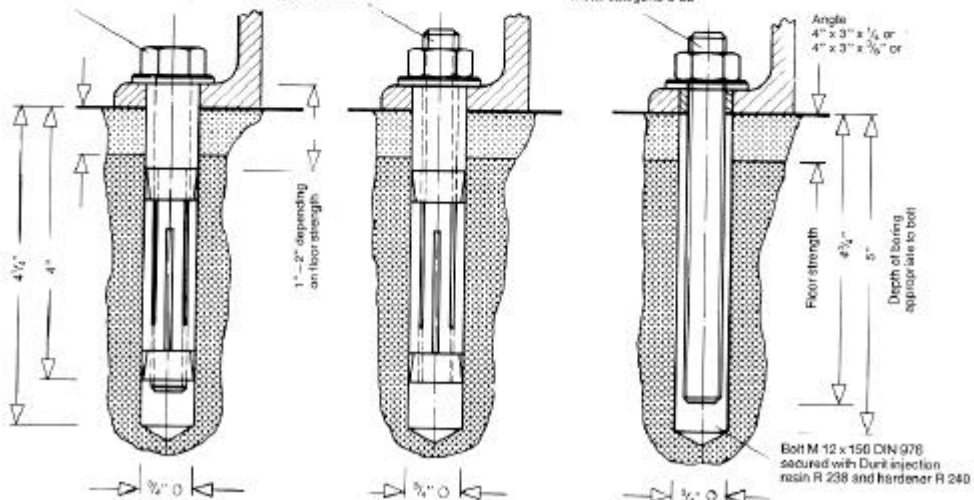
Installation of guide rails and method of securing

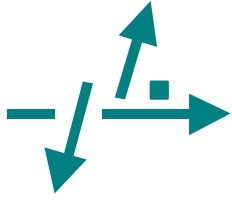


Upat-PS-Anchoring bolt
Type S/18/50

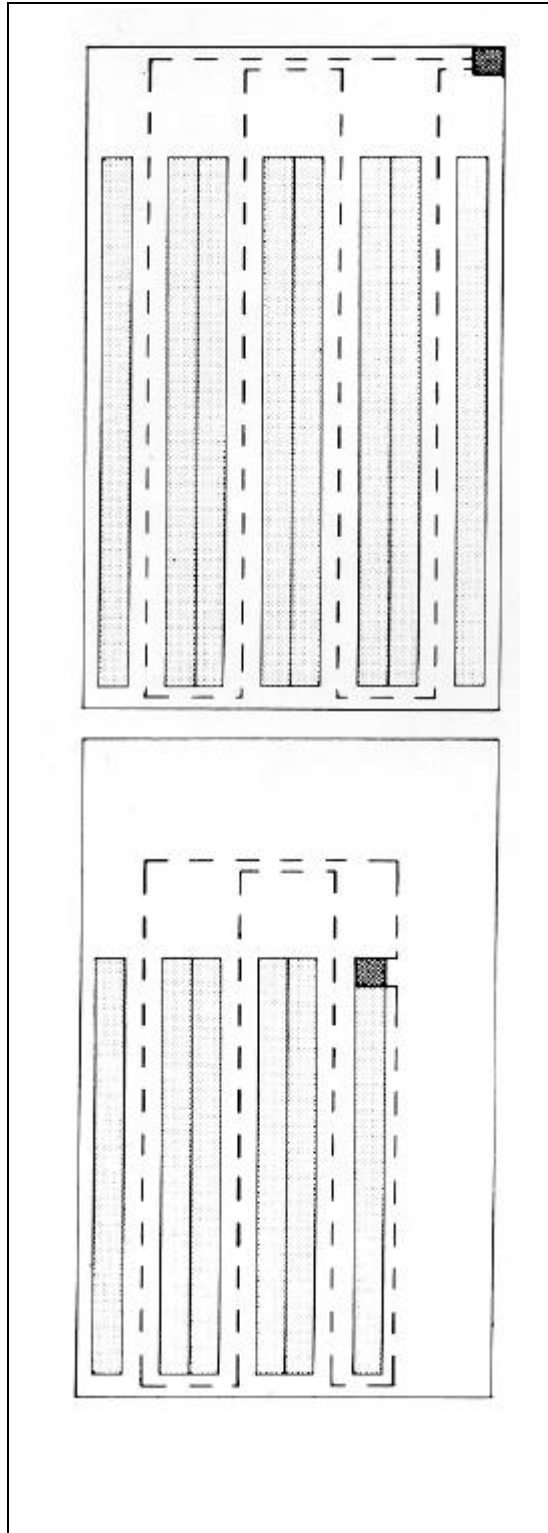
Upat-PS-Anchoring bolt
Type B/18/50

Bolt M 12, Grade 8.8 from 8.8
metal category C 35





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Line Driver

Sample layout depicts (2) single & (3) back-to-back rows of rack 100 ft long. An aisle width of 73" and an intersecting aisle of 12 ft. The length of wire used is approx. 520 ft.

The guide wire is covered with a flexible insulation. The wire will be installed approximately 1/4" below the surface of the floor.

One line driver will supply the required frequency to a loop of max. 4000 ft. For larger installations a second line driver should be installed.

The concrete floor should be level and meet specifications stated on previous pages. Any floor reinforcements must be at least 2" below the surface. Large metallic objects as well as underground power lines should be kept at a safe distance from the guide wire.

In case of unavoidable interference contact the PMH. To calculate the cost for the wire installation multiply length of aisles and add connecting length of wire between aisles to form a continuous circuit.

The guide wire from the load aisles should extend 8 - 10 ft into the intersecting aisles. The return wire must be kept a minimum of 2 ft apart.

Layout depicts (2) single & back-to-back rows of rack. Length of wire approx. 500 ft.