

# Cantilever Rack System



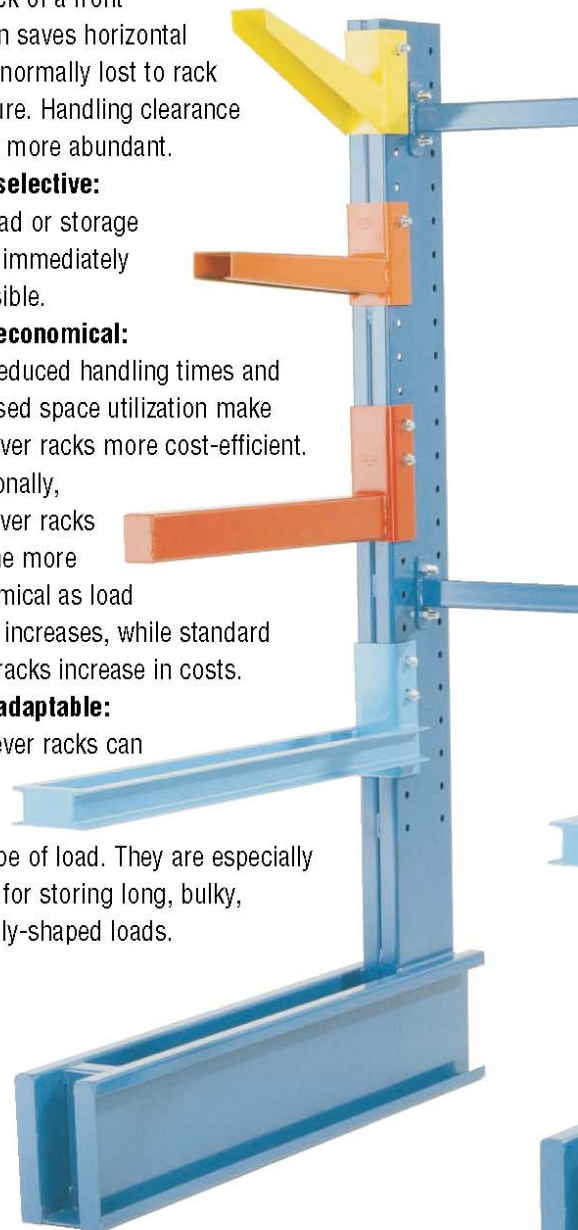
*Armed for Bearing.*

**STEEL KING**

# When to choose cantilever racks

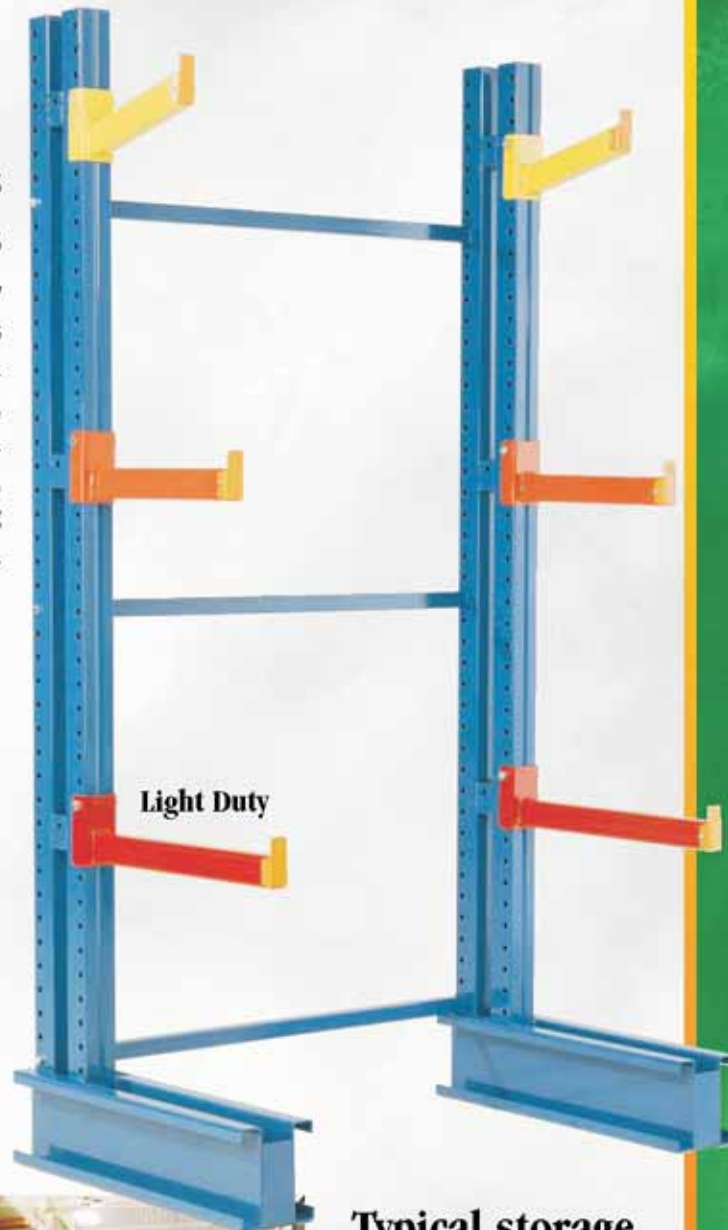
Cantilever racks are a superior storage solution in many situations. Compared to standard pallet racks, cantilever racks are:

- **Easier to use:**  
With no front column in the way, cantilever racks are faster to load and unload, lowering handling time and costs.
- **More flexible:**  
Loads may be placed anywhere along the entire length of a row on a cantilever rack.
- **More compact:**  
The lack of a front column saves horizontal space normally lost to rack structure. Handling clearance is also more abundant.
- **More selective:**  
Any load or storage slot is immediately accessible.
- **More economical:**  
Both reduced handling times and increased space utilization make cantilever racks more cost-efficient. Additionally, cantilever racks become more economical as load length increases, while standard pallet racks increase in costs.
- **More adaptable:**  
Cantilever racks can store nearly any type of load. They are especially useful for storing long, bulky, or oddly-shaped loads.



## Why Steel King's cantilever racks

Steel King leads the way in rack technology with innovation and experience - 30 years in the materials handling industry. Our superior designs give you a rugged, long lasting, truly economical rack. Steel King offers innovative, expert solutions to complex storage problems.



### Typical storage applications

- Plywood
- Lumber
- Furniture
- Appliances
- Pipe
- Structural members
- Sheet steel
- Tubing
- Doors
- Boxes
- Pallets
- Conduit
- Extrusions
- Rolls
- Building materials
- and many more!

## Expertise

At Steel King, your storage problems will be solved with the highest level of expertise and innovation offered anywhere in the industry.

Registered structural engineers design all Steel King products to strictly conform with industry safety codes.

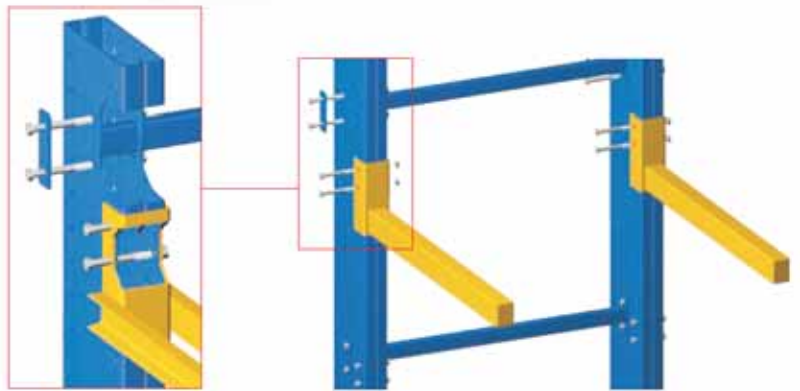
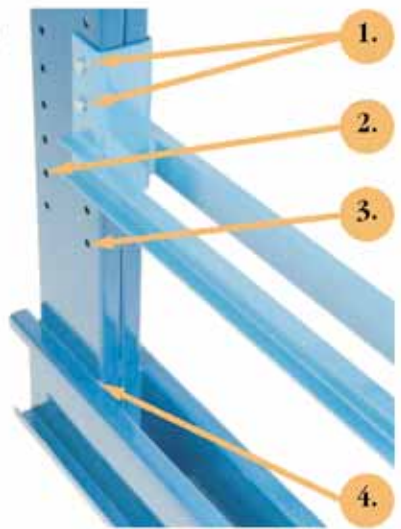


Steel King manufactures a large variety of storage components for maximum compatibility and reliability. From concept through engineering, manufacturing, installation, and start-up, Steel King has the experience to make your system work right - right from the start.



## Compare before you buy, Steel King is the better choice

- **Easy Installation**
  - Modular design also allows easy expansion
- **Stronger steel**
  - High strength steel throughout
- **Better function**
  - Full integration with Steel King's complete line of storage solutions
- **Higher value**
  - Lower lifetime costs
- **More options**
  - Full range of standard and custom sizes and capacities
- **Smarter design**
  - Easy installation
- **Better fit**
  - Choice of light duty, and standard duty designs
- **Safer construction**
  - Safety factors:  
Uprights = 1.8:1  
Arms = 1.67:1



### Features

1. All bolted arm connections (grade 5 hardware)
2. Pre-punched connection hole
3. Connection holes on side, not corners of column
4. Base is welded to column at factory

### Benefits

1. Bolted connections are the strongest adjustable connections
2. Easy arm installation, adjustment, and leveling. Arm cannot "slip" out of position
3. Minimum loss of column strength
4. Strong base connection, easy installation, at less cost



## Steel King's standard duty cantilever racks handle heavy duty applications

Efficient, organized storage of longer oddly-sized materials. Available in a wide variety of sizes and capacities, Steel King's standard duty cantilever racks present an assortment of storage solutions. Choose any style for simple installation, low maintenance, and rugged operation.

- Bolted connections secure arms to columns
- Heavy arm connector plate holds rigid even under heavy loads
- Sloped connector slot in arms facilitates proper seating and load transmission to the column
- Columns factory welded to bases
- Arms adjustable vertically in 3" increments
- Many arm sizes and types available
- Modular construction expands easily



**The best racks don't always come off the shelf**

Off the shelf solutions don't always meet the requirements of your building, product, or systems.

Steel King starts with an analysis of your warehousing objectives to determine the most efficient means of storing and accessing product.

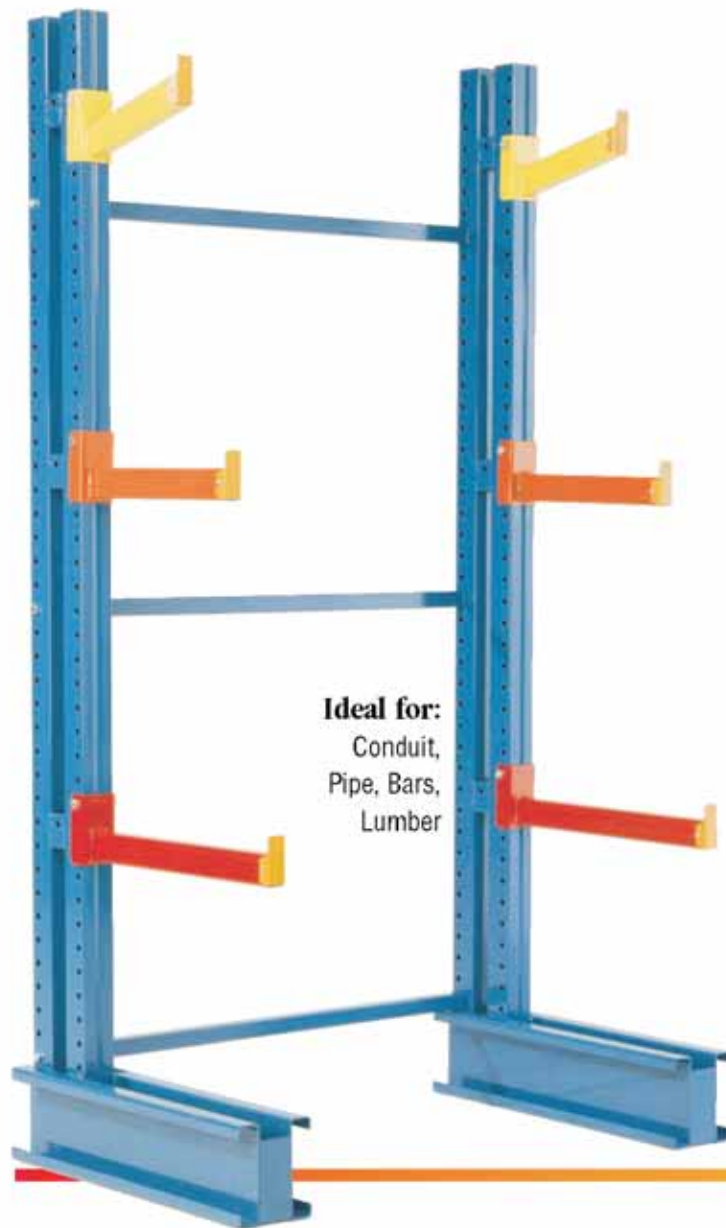
The result: dramatically reduced long-term operating costs.

## Light duty cantilever racks

Economical racks for **HAND LOADING** only.

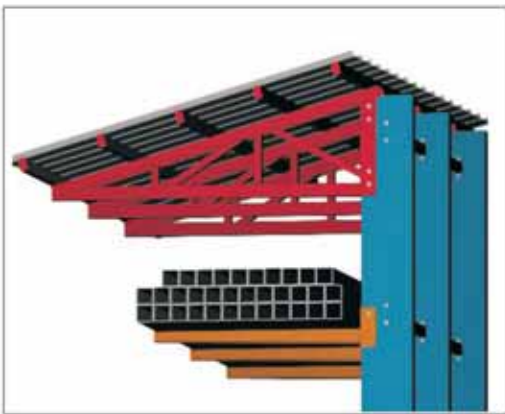
Manually accessed loads are stored easily and securely in Steel King's light duty cantilever racks. Don't mistake light duty for "lite" construction. Steel King doesn't cut corners on structural integrity.

- 55,000 psi high strength steel columns
- Bolted connections secure arms to columns
- Columns factory welded to bases
- Arms adjustable vertically in 2" increments

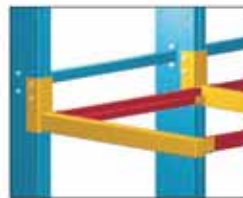


## Options and accessories for light and standard duty cantilever racks

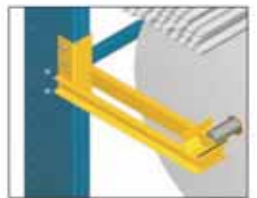
**Roof brackets:**  
Attaches to arms to accept stringers for roof structure



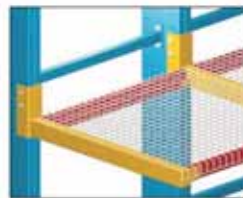
**Saddles:**  
Attaches to arms. Used for decking supports.



**Core / axle saddles:**  
Attaches to arms for accepting core / axle of rolls.



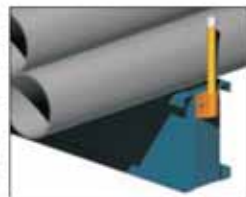
**Wire Deck:**  
Attaches to arms for storage of odd lengths of bar, rounds, etc.



**Welded Lips:**  
Welds to arms or base. Many heights available.



**Removable pipe end stops:**  
Attaches to arms or base. Includes Pipe, bracket and plastic cap.



**Drop-on pans:**  
Attaches to arms for storage of odd lengths of bar, rounds, etc.



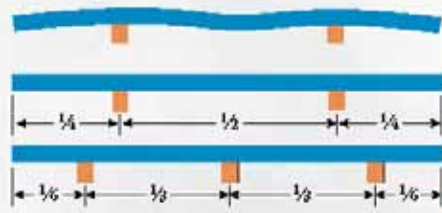
**Bolted End Lips:**  
Arms punched to accept optional removable end lips.



# How to design your cantilever rack system

## 1. Determine the number and spacing of support arms.

- 1a. Use enough arms under a load to prevent deflection of the load. Deflection causes undesirable side pressure on the arms. Using wood blocks on the floor under the load, test your load for deflection on a two-support system.



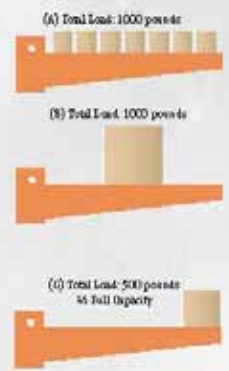
1a  
1b  
1c

- 1b. If you do not detect any deflection, you may use two support arms. The arm capacity required will be half the load weight, and the upright centerline will be 1/2 of the load length.



2a

- 1c. If you notice deflection with two supports, try three supports. If this system works, arm capacity will be 1/3 of the load weight, and the upright centerlines will be 1/3 of load length. If three supports are still not enough, add supports as necessary until deflection is eliminated.



Arm capacity is based on uniformly distributed loads as shown in (A) & (B)

Loading pattern shown in (C) reduces capacity of arm by 50%

**Note:** Product should overhang the end of the rack by 1/2 of the upright centerline distance. Loading without overhang is incorrect.

## 2. Determine arm length. Arm length should equal load depth. 2a is correct, 2b is incorrect.

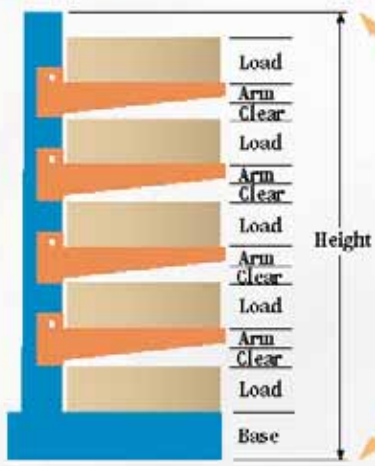


2b

## 3. Determine upright height.

- Start with base height:
- + number of storage levels x load height
- + handling clearance [4" to 6"] x number of levels
- + number of arm levels x arm thickness
- = upright height.

- Note:** Contact Steel King for current arm and base dimensions.
- Note:** Check limitations at your plant such as ceiling clearance or fork lift height.
- Note:** Top arm level must be below the top of the column.



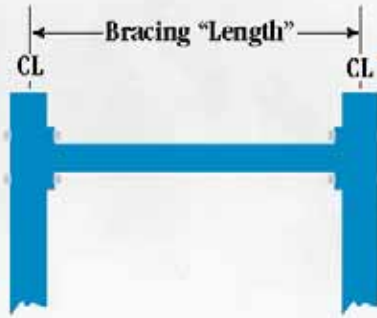
3.

## 4. Determine capacities required.

- Arms: Load weight ÷ number of arms per level = arm capacity. (Assuming each arm supports an equal amount of the load)
- Uprights: Number of arms per side x load per arm.

**Note:** Load on base is not included in capacity.

## 5. "Bracing lengths" refer to the horizontal centerline distance from column to column, as in the diagram. See Step 1 for the proper number of braces per type of load.



5

Bracing is sold in pieces, not sets. Contact Steel King for current bracing information.



STEEL KING



## Expertise

From concept through engineering, manufacturing, installation, and start-up, Steel King has the experience to make your system work right – right from the start.

Their nationwide network of PREMIER Distributors stands ready to provide you with prompt, knowledgeable, local service.

## The Steel King Standard

Innovation, quality, integrity, exceptional designs, and expert manufacturing... where Steel King goes, others follow.



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Drive-in Rack



Cantilever Rack



Pallet Flow



Pushback Rack



Rigid Container



Workingtainer



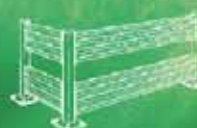
Corrugated Container



Hold 'N Fold



Portable Rack



Steel Guard



Mega Guard