Product Support Guide

Structural H23 Cantilever

Columns, Bases and Arms

Interlake MECALUX

Structural Cantilever

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GENERAL INFORMATION

This support guide covers technical information for Structural Cantilever Columns, Bases and Arms. Structural Cantilever is a very effective design solution for odd-size heavy-duty loads.

PRODUCT DESCRIPTION

Cantilever racking is specifically designed to store items with long or varied lengths, such as metal beams, pipes, molding, wooden boards, metal and plastic sheets and a wide range of other materials.

CODE COMPLIANCE

Interlake Mecalux storage systems are designed in compliance with the 2012 edition of the "Specification for the Design, Testing and Utilization of Industrial Steel Storage Rack" published by the Rack Manufacturers Institute (RMI). This specification has been adopted by the American National Standards Institute (ANSI-MH16.1) as a national standard and is referenced by the 2006 International Building Code (IBC). Our designs also comply with the 2007 American Iron and Steel Institute's (AISI) North American Specification for the Design of Cold-Formed Steel Structural Members. In addition, the Mecalux Group follows the standards set forth by IAS (International Accreditation Service), the City of Los Angeles, the City of Phoenix and Clark County.

AVAILABILITY AND SHIPPING LOCATIONS

Interlake Mecalux Structural Cantilever is manufactured and distributed from our plants located at:

CANTILEVER MANUFACTURING

MATAMOROS
Las Rusias 2700,
Industrial del Norte
Matamoros Tamaulipas, C.P. 87316

TIJUANA
Blvd. Bellas Artes, 9001
Ciudad Industrial Nueva Tijuana
Tijuana, B.C. - C.P. 22444

CANTILEVER DISTRIBUTION

CHICAGO
1600 North 25th Ave.
Melrose Park, IL 60160

DALLAS
12301 N Stemmons Freeway,
Suite # 110
Farmers Branch, TX 75234

SAN DIEGO
8607 Ave. De La Fuente
San Diego, CA 92154

ISO 9001:2000 certified, ISO 9001:2000 certified Matamoros, Mexico 87310 and Tijuana, Mexico 22444.

PRODUCT OVERVIEW

The Structural Cantilever H23 storage system consists of columns connected with horizontal and "X" braces. A series of arms are attached to the columns (uprights) and loads are placed on the arms.

Loads may be handled manually when they are lightweight, or by using lift trucks or other appropriate lifting systems when heavy items are involved.

The Cantilever shelves are especially designed to store extra-long loads and are continuous with no vertical dividers.

It is necessary to consider the weights and dimensions of the loads when designing a Cantilever system.

LEVEL HEIGHT

Our cantilever level height includes the height of the load + the height of the arm (3" to 6") + a recommended clearance (4" to 6") between the top of the load and the bottom of the next arm level. Note that our Cantilever Columns are punched every 4", so the Level Height will be created in 4" increments.

e.g. Load height = 40" and arm model is S3"X5.7 (3" High)
40" load + 3" arm + 4" to 6" clear = 47" to 49", in this case we would use a 48" LEVEL HEIGHT (4" increment).

LOAD DEPTH

Determines the length of the necessary arm, that will normally be equal or longer than the product stored. Our standard H23 arm lengths are: 24", 36", 48", 60" and 72".

e.g. Load depth = 46", recommended arm length will be 48".

There are cases where this rule does not apply. In cases of product, like lumber or flat sheets, the product can extend out of the arm. Contact your Interlake Mecalux Sales Representative for more information.

LOAD LENGTH (BAY WIDTH)

The length, deflection and weight of the product will determine the number of supporting arms. This number will also indicate the number of columns that are needed. The minimum recommendation would be for 2 arms to support the load, in this case the load length is divided by 2 and the resulting number will be the bay width to be used. Note that our Cantilever bay widths are between 24" and 96" in 6" increments.

e.g. Load length = 240" / 2 arms = 120" > 96", in this case we would recommend dividing by 3 ARMS.
240" / 3 arms = 80" (we would recommend 84" which is a standard bay width).

LOAD PER ARM

Once the Load Length is determined, we can use the number of arms to calculate how many pounds each arm should be rated for, this is also helpful in determining the Base and Column capacity.

e.g. Load weight = 3,000 lb. and 2 arms will be used
3,000 / 2 = 1,500 lb per arm.

Note that if the Cantilever Arms are not rated for the specific weight, the bay width may need to be recalculated with a higher number of arms in order to lower the pounds per arm, in which case the calculation would be 3,000 / 3 = 1,000 lb per arm.

COLUMN HEIGHT

The height of the column will be equal to the Level Height X number of Arm levels required + base height. The distance from the top arm to the top of the column should be at least half of the load height. Our standard H23 column heights are: 8', 10', 12', 14', 15', 16', 18', 20', 22', 24', 26', 30', 32', 34', 36' and 38'.

e.g. Level height = 48", 3 arm levels + base H (W8"X18), load height is 40" (40" / 2 = 20" minimum from top arm to top of column)
48" X 3 = 144" + 8"(base) = 152" + 40"(top load) = 192" (16'), in this case we would recommend using a 16' column.

GLOSSARY

Bay: Group that consists of at least 2 columns, any additional columns will increase the number of bays by factor of 1 if they are part of the same row. Our cantilever bay widths are between 24" and 96".

e.g. 2 columns = 1 bay, 3 columns = 2 bays, 4 columns = 3 bays.

Row: A group of bays, the number of bays is determined by how many loads wide the cantilever should hold or the limitation in available space. Rows are united by horizontal and vertical "X" braces.

e.g. Loads require 3 arms / columns wide minimum and row needs to hold 4 loads wide.
3 x 4 = 12 arms / columns wide (11 bays).

STRUCTURAL COMPONENTS

Interlake Mecalux has developed a heavy-duty cantilever racking system to cover all market needs.

The choice of the most appropriate solution depends on the characteristics of the product to be stored - particularly the

product's weight, size and height.

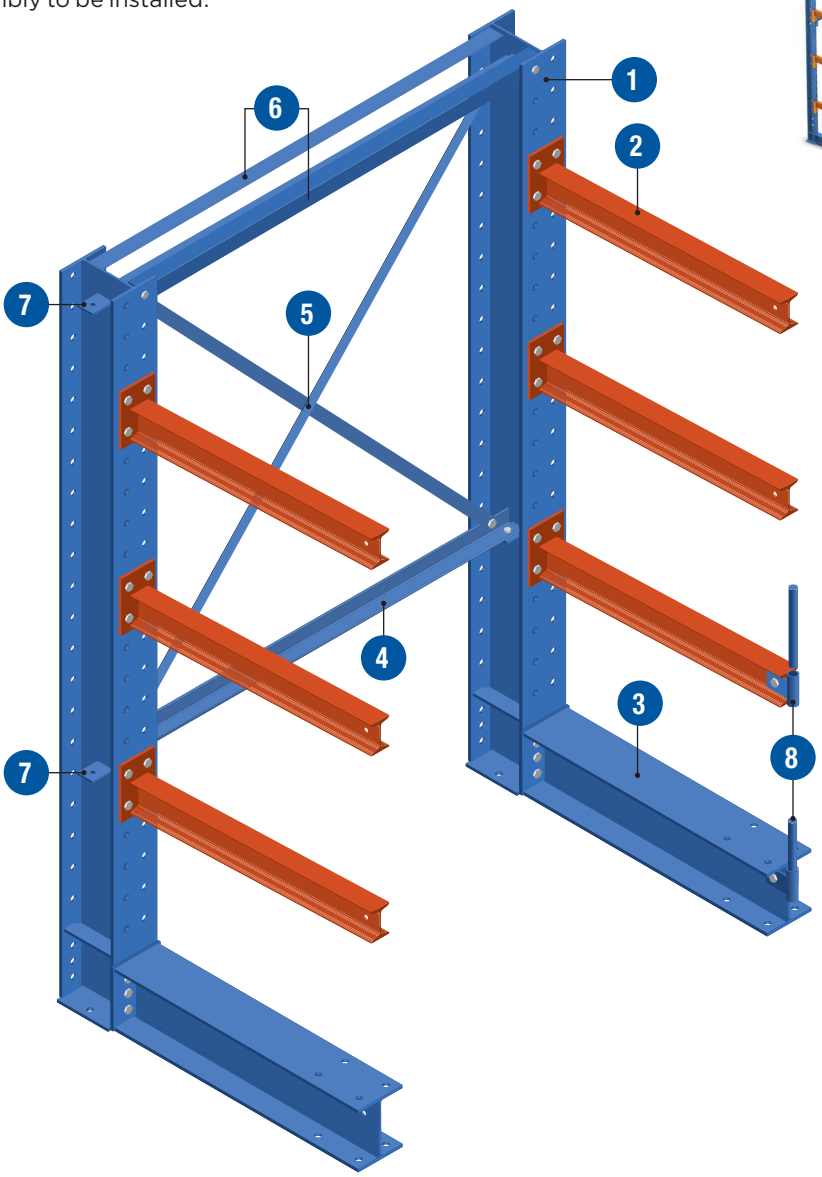
COLUMNS AND BASES

The Structural Cantilever columns and bases are manufactured using heavy-duty profiles (W8"X18, W8"X24, W10"X26 or W12"X30).

Every column model comes with punch holes for positioning, allowing arms to be placed in 4" intervals; W8" columns have 6 drill holes every 2" for base connections, W10" and W12" columns have 8 drill holes every 2" for base connections.

ARMS

The Structural Cantilever arms are manufactured using heavy-duty profiles (S3"X5.7, S4"X7.7, S5"X10 and S6"X12.5); they come pre-drilled with a 0.5" hole that allows an optional pipe stop assembly to be installed.

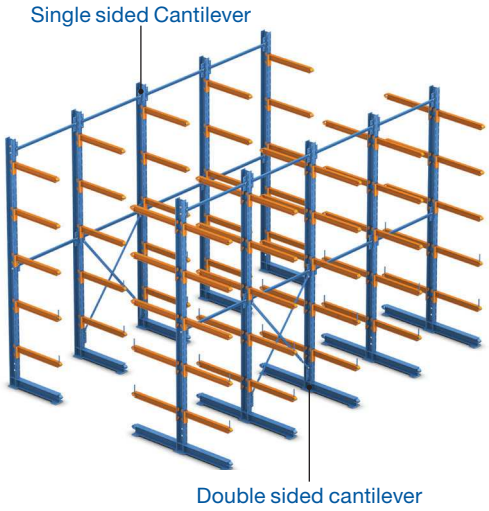


SINGLE SIDED (L) CANTILEVER

Single sided Cantilever is normally placed against the walls with access from one side only.

DOUBLE SIDED (C) CANTILEVER

Double sided Cantilever can be used as an alternative that allows access from both sides.



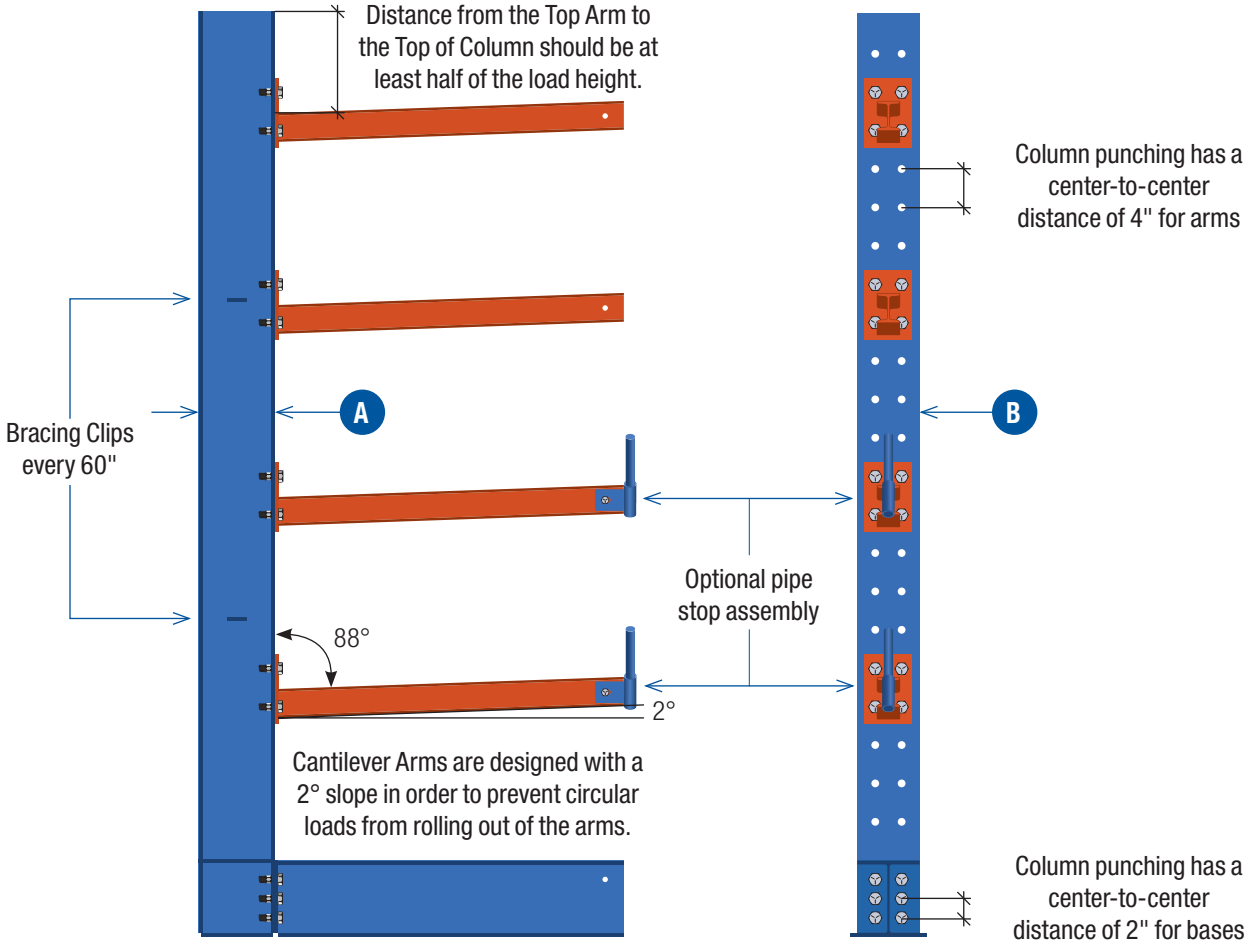
Components

1. Column "W"
2. Arm "S"
3. Base "W"
4. Horizontal bracing
5. Cross bracing ("X" Bracing)
6. Upper horizontal bracing
7. Welded bracing clips
8. Pipe stop assembly (optional)

PRODUCT CODE DESCRIPTION

COL.H23 C W8″X18 U 8′

- C = Double Sided / L = Single Sided
- Profile Shape
- Column Depth (8", 10" or 12)
- Pounds per foot (weight) 8" = 18 or 24, 10" = 26, 12" = 30
- Column Height (ft)



Overall Column Dimensions				
Model	W8" X 18	W8" X 24	W10" X 26	W12" X 30
A (DEPTH)	8"	7.93"	10.33"	12.34"
B (WIDTH)	5.25"	6.49"	5.77"	6.52"

STRUCTURAL CANTILEVER H23

SINGLE (L) AND DOUBLE SIDED (C) COLUMNS

Made with W8", W10" and W12" profiles with holes punched on one flange to create a Single Sided (L) column or holes punched on both flanges to create the Double Sided (C) column, which have been welded to the base plate for slab attachment.

• The following models exist: W8"X18, W8"X24, W10"X26 and W12"X30.

• Hole punches on 4" vertical centers allow the positioning of the arms to the maximum required number of levels.

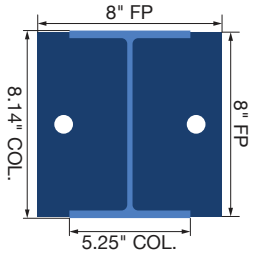
• Available in standard Mecalux Blue Finish (RAL 5003).

• Standard heights are: 8', 10', 12', 14', 16', 18', 20', 22', 24', 26', 28', 30', 32,' 34', 36' and 38'.

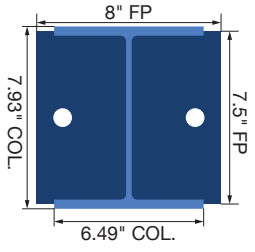
• Attached to the slab using (1) Anchor Bolt ¾ X 5 ½" HILTI TZ (U0077330).

COL.H23 C W8"X18 U 8'

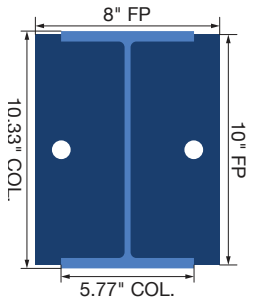
- C = Double Sided
  L = Single Sided
- Profile Shape
- Column Depth (8", 10" or 12)
- Pounds per foot (weight)
  8" = 18 or 24
  10" = 26
  12" = 30
- Column Height (ft)



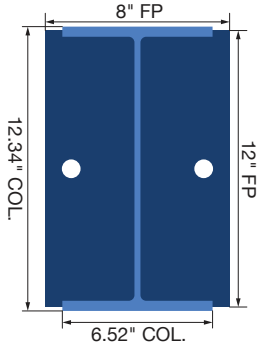
W8" X 18



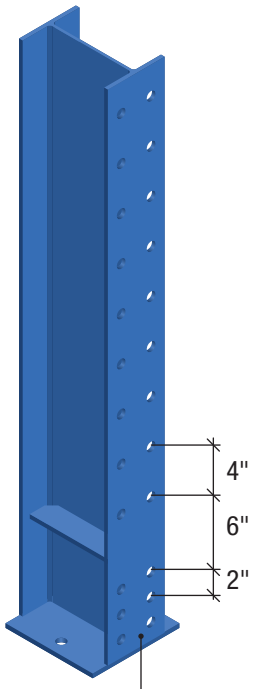
W8" X 24



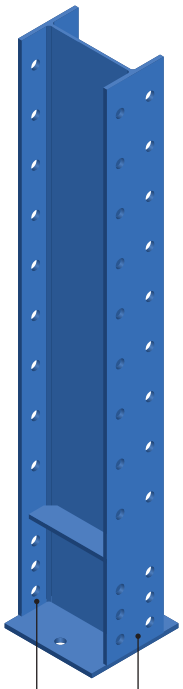
W10" X 26

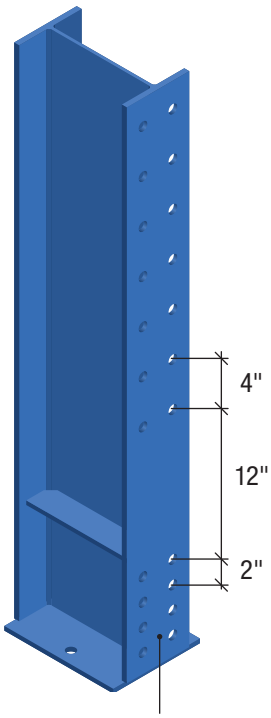


W12" X 30

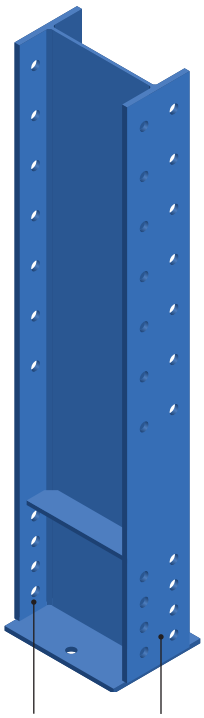


"L" Single Sided
W8" X 18 and W8" X 24


"C" Double Sided
W8" X 18 and W8" X 24



"L" Single Sided
W10" X 26 and W12" X 30


"C" Double Sided
W10" X 26 and W12" X 30

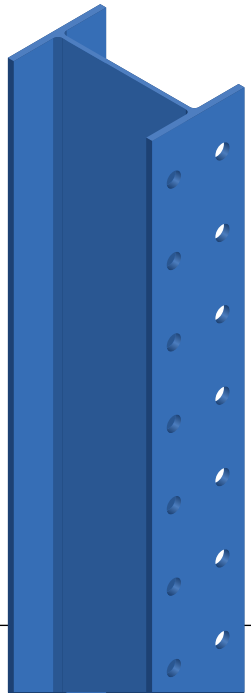
STRUCTURAL CANTILEVER COLUMNS H23

SINGLE (L) AND DOUBLE SIDED (C) COLUMNS PART NUMBERS

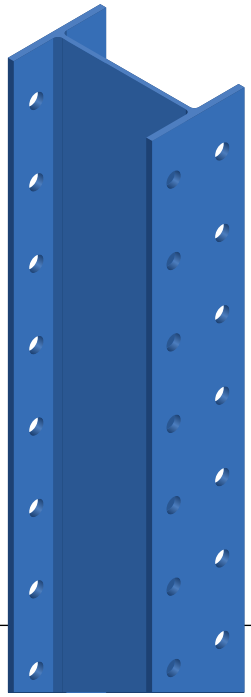
Single Sided "L" Part Numbers				
Column Height	**W8" X 18**	**W8" X 24**	**W10" X 26**	**W12" X 30**
8'	T0210732	T0210764	T0210796	T0210828
10'	T0210733	T0210765	T0210797	T0210829
12'	T0210734	T0210766	T0210798	T0210830
14'	T0210735	T0210767	T0210799	T0210831
16'	T0210736	T0210768	T0210800	T0210832
18'	T0210737	T0210769	T0210801	T0210833
20'	T0210738	T0210770	T0210802	T0210834
22'	T0210739	T0210771	T0210803	T0210835
24'	T0210740	T0210772	T0210804	T0210836
26'	T0210741	T0210773	T0210805	T0210837
28'	T0210742	T0210774	T0210806	T0210838
30'	T0210743	T0210775	T0210807	T0210839
32'	T0210744	T0210776	T0210808	T0210840
34'	T0210745	T0210777	T0210809	T0210841
36'	T0210746	T0210778	T0210810	T0210842
38'	T0210747	T0210779	T0210811	T0210843

Double Sided "C" Part Numbers				
Column Height	**W8" X 18**	**W8" X 24**	**W10" X 26**	**W12" X 30**
8'	T0210716	T0210748	T0210780	T0210812
10'	T0210717	T0210749	T0210781	T0210813
12'	T0210718	T0210750	T0210782	T0210814
14'	T0210719	T0210751	T0210783	T0210815
16'	T0210720	T0210752	T0210784	T0210816
18'	T0210721	T0210753	T0210785	T0210817
20'	T0210722	T0210754	T0210786	T0210818
22'	T0210723	T0210755	T0210787	T0210819
24'	T0210724	T0210756	T0210788	T0210820
26'	T0210725	T0210757	T0210789	T0210821
28'	T0210726	T0210758	T0210790	T0210822
30'	T0210727	T0210759	T0210791	T0210823
32'	T0210728	T0210760	T0210792	T0210824
34'	T0210729	T0210761	T0210793	T0210825
36'	T0210730	T0210762	T0210794	T0210826
38'	T0210731	T0210763	T0210795	T0210827

"L" Single Sided Columns



"C" Double Sided Columns

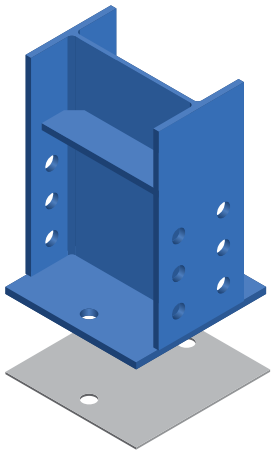


H23 COLUMN SHIMS W8"X18, W8"X24, W10"X26 AND W12"X30

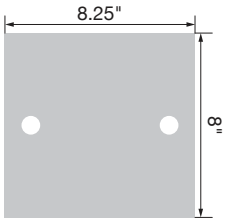
These shims can be placed beneath the H23 cantilever columns to level the upright. One or more shims are required per column.

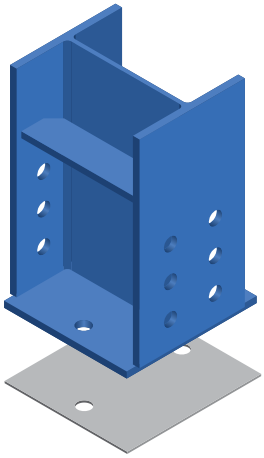
- Available in standard Galvanized finish.
- GA 11 (0.125").

H23 Column Shim Part Numbers			
W8" X 18	W8" X 24	W10" X 26	W12" X 30
T0210917	T0210918	T0210919	T0210920

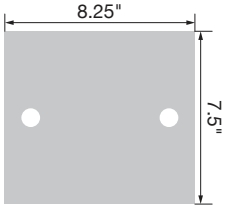


W8"X18

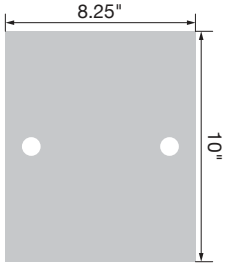


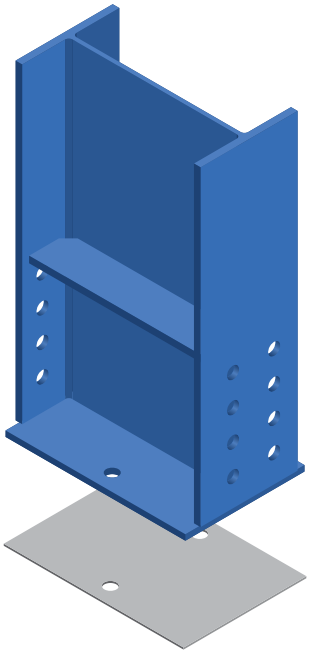


W8"X24

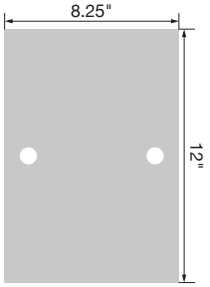


W10"X26





W12"X30

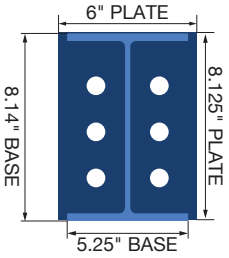


STRUCTURAL CANTILEVER BASE H23 W8″

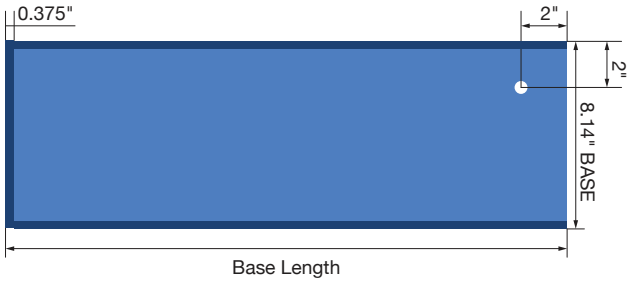
BASE H23 W8″X18 AND W8″X24

Made with the same structural profile as the columns, includes one welded plate that will help with the connection to the column using (6) Bolts ¾ X 2″ G5 Z (U0074780) and (6) Nuts ¾-10 G5 Z (U0074695).

- Available in standard Mecalux Blue finish (RAL 5003).
- Standard lengths are: 24″, 36″, 48″, 60″ and 72″.
- When the base is attached to the column, it becomes the first storage level.
- Attached to the slab using (1) Anchor Bolt ¾ X 5 ½″ HILTI TZ (U0077330).



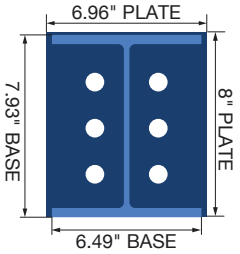
W8" X 18



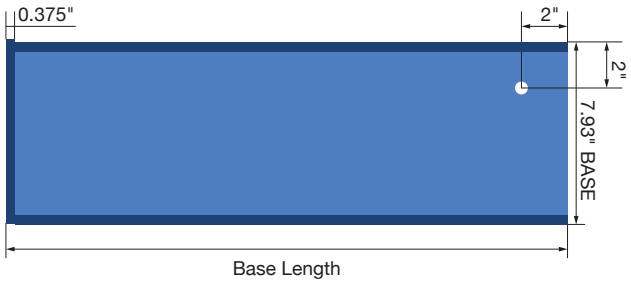
BASE H23 W8″X18 U 2′

- Base Height (8", 10" or 12")
- Pounds per foot (weight)
  8" = 18 or 24
  10" = 26
  12" = 30
- Base Length (ft)

H23 Base Part Numbers				
Base Length	W8" X 18	W8" X 24	W10" X 26	W12" X 30
2'	T0210844	T0210849	T0210854	T0210859
3'	T0210845	T0210850	T0210855	T0210860
4'	T0210846	T0210851	T0210856	T0210861
5'	T0210847	T0210852	T0210857	T0210862
6'	T0210848	T0210853	T0210858	T0210863



W8" X 24

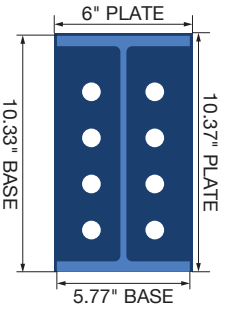


STRUCTURAL CANTILEVER BASE H23 W10″ AND W12″

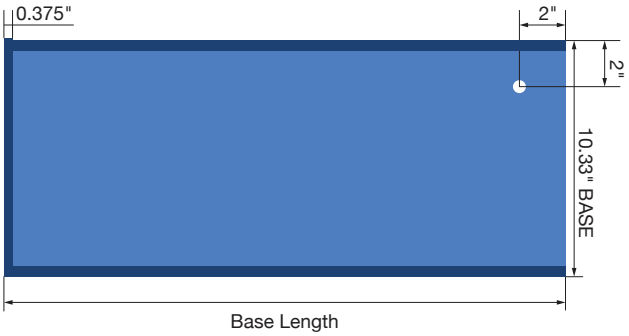
BASE H23 W10″X24 AND W12″X30

Made with the same structural profile as the columns, includes one welded plate that will help with the connection to the column using (8) Bolts ¾ X 2″ G5 Z (U0074780) and (8) Nuts ¾-10 G5 Z (U0074695).

- Available in standard Mecalux Blue finish (RAL 5003).
- Standard lengths are: 24″, 36″, 48″, 60″ and 72″.
- When the base is attached to the column, it becomes the first storage level.
- Attached to the slab using (1) Anchor Bolt ¾ X 5 ½″ HILTI TZ (U0077330).



W10" X 26



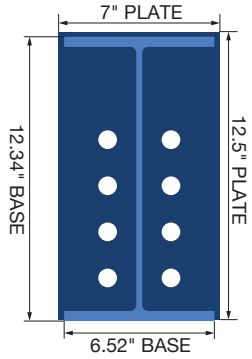
BASE H23 W10″X26 U 2′

Base Height (8", 10" or 12")

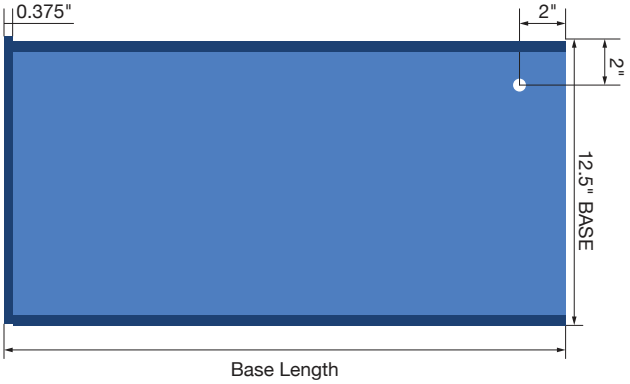
Pounds per foot (weight)
8" = 18 or 24
10" = 26
12" = 30

Base Length (ft)

H23 Base Part Numbers				
Base Length	W8" X 18	W8" X 24	W10" X 26	W12" X 30
2'	T0210844	T0210849	T0210854	T0210859
3'	T0210845	T0210850	T0210855	T0210860
4'	T0210846	T0210851	T0210856	T0210861
5'	T0210847	T0210852	T0210857	T0210862
6'	T0210848	T0210853	T0210858	T0210863



W12" X 30



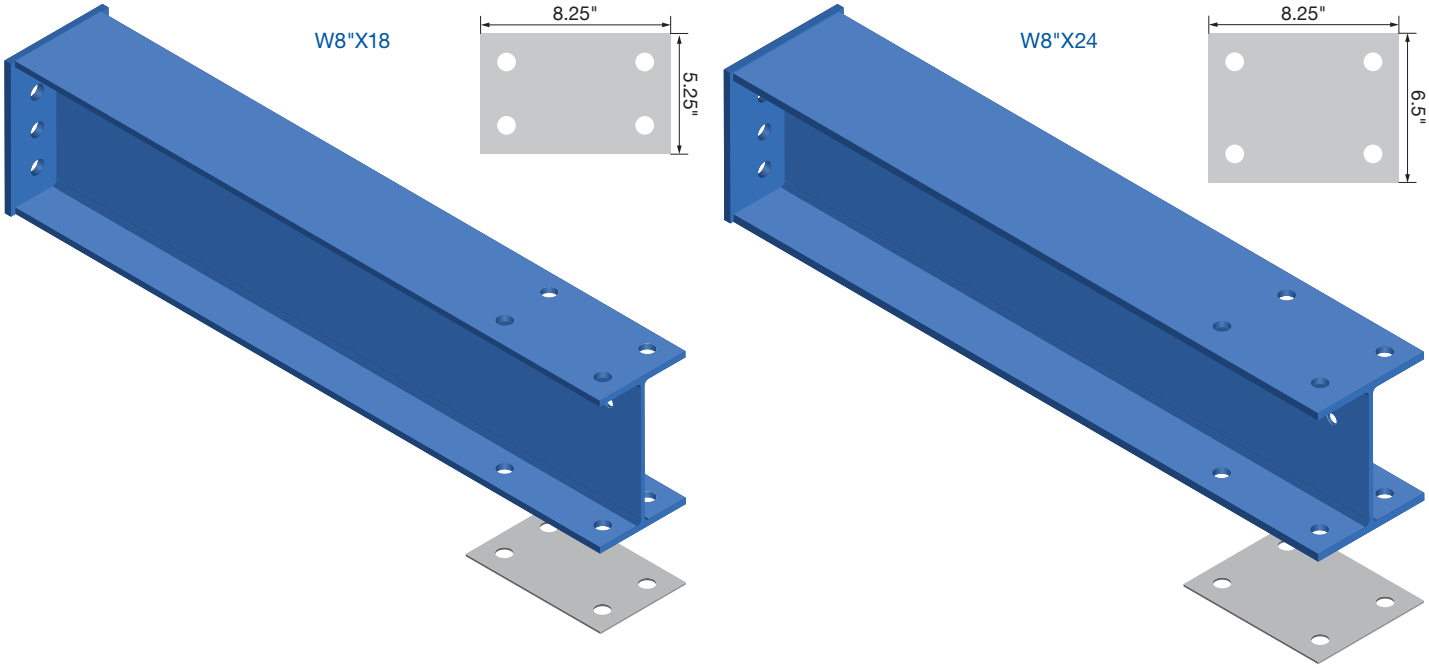
STRUCTURAL CANTILEVER
H23 BASE SHIMS

H23 BASE SHIMS W8"X18 AND W8"X24

These shims can be placed beneath the H23 cantilever bases in order to keep the system level. One or more shims are required per base.

- Available in standard Galvanized finish.
- GA 11 (0.125").

H23 Base Shim Part Numbers			
W8" X 18	**W8" X 24**	**W10" X 26**	**W12" X 30**
T0210921	T0210922	T0210923	T0210924



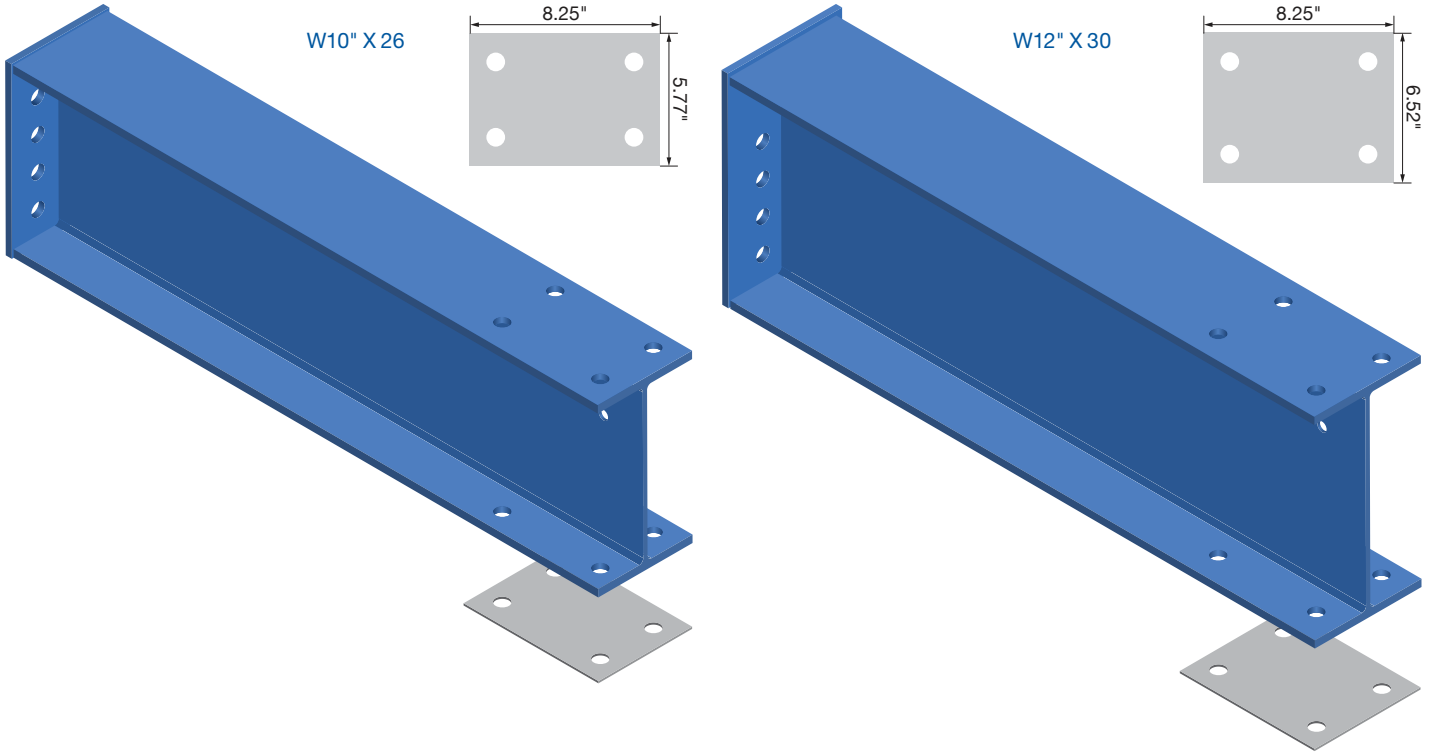
STRUCTURAL CANTILEVER H23 BASE SHIMS

H23 BASE SHIMS W10"X26 AND W12"X30

These shims can be placed beneath the H23 cantilever bases in order to keep the system level. One or more shims are required per base.

- Available in standard Galvanized finish.
- GA 11 (0.125").

H23 Base Shim Part Numbers			
W8" X 18	W8" X 24	W10" X 26	W12" X 30
T0210921	T0210922	T0210923	T0210924



ANCHOR DISTRIBUTION

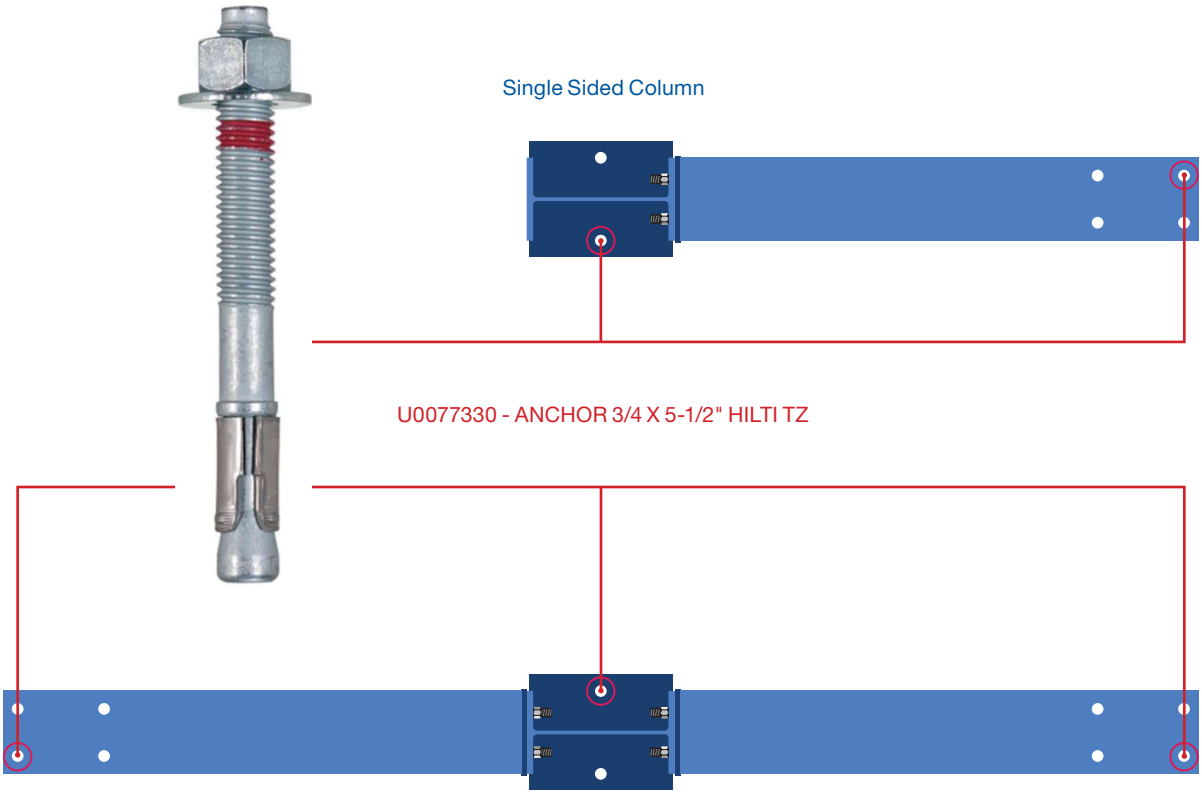
ANCHOR 3/4 X 5-1/2 HILTI TZ (U0077330)

Every column and base on the H23 Cantilever rack installation should be anchored to the floor using at least one anchor.

Some installations require additional heavier anchorage due to seismic or wind considerations.

The standard anchor provided for H23 Cantilever installations is HILTI TZ Anchor 3/4 X 5-1/2" (U0077330).

STANDARD ANCHOR DISTRIBUTION IN NON-SEISMIC ZONES

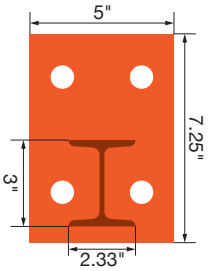


STRUCTURAL CANTILEVER ARMS H23

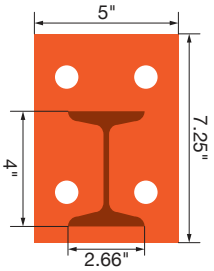
ARM H23 S3"X5.7U, S4"X7.7U

These arms consist of two pieces starting with profile section S3", S4", S5" or S6", with a connection plate with four holes that will connect the arm to the column using (4) Bolts ¾ X 2" G5 Z (U0074780) and (4) Nuts ¾-10 G5 Z (U0074695).

- Compatible with H23 Columns: W8"X18, W8"X24, W10"X26 and W12"X30.
- Available in standard Orange finish (RAL 2001).
- Standard lengths are: 24", 36", 48", 60" and 72".



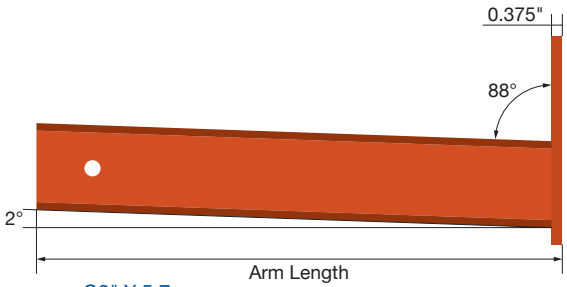
S3" X 5.7



S4" X 7.7

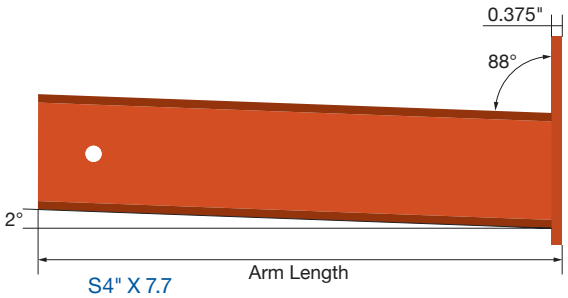
ARMS H23 S3"X 5.7 U 2'

- Arm Height: 3", 4", 5" or 6"
- Pounds per foot (weight) 3"=5.7, 4"=7.7, 5"=10 and 6"=12.5
- Arm Length (ft)

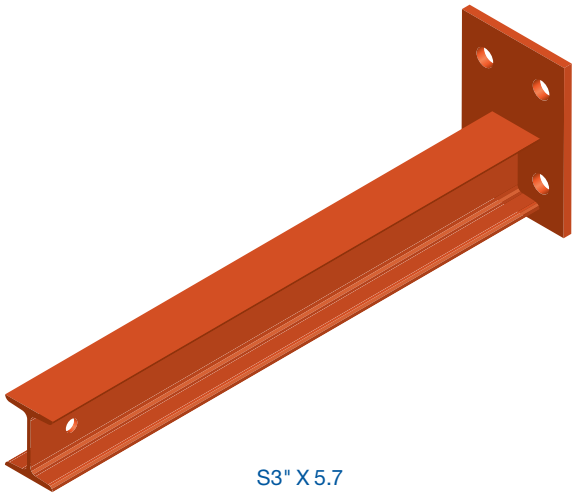


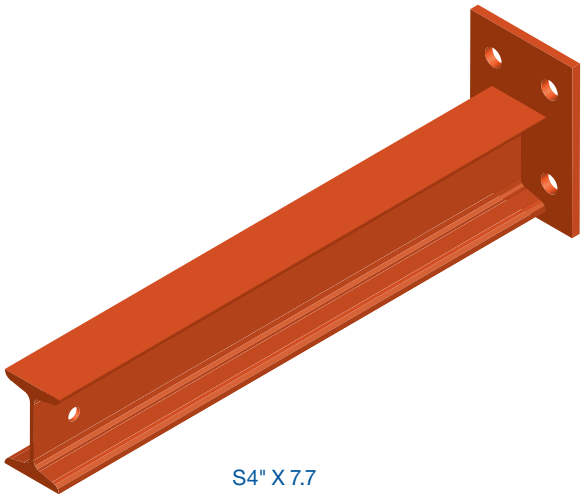
S3" X 5.7

H23 Arm Part Numbers				
Arm Length	**S3" X 5.7**	**S4" X 7.7**	**S5" X 10.0**	**S6" X 12.5**
2'	T0210864	T0210869	T0210874	T0210879
3'	T0210865	T0210870	T0210875	T0210880
4'	T0210866	T0210871	T0210876	T0210881
5'	T0210867	T0210872	T0210877	T0210882
6'	T0210868	T0210873	T0210878	T0210883



S4" X 7.7


S3" X 5.7

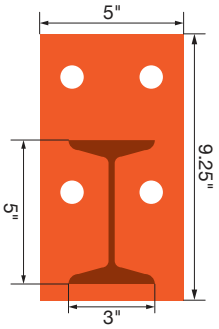

S4" X 7.7

STRUCTURAL CANTILEVER ARMS H23

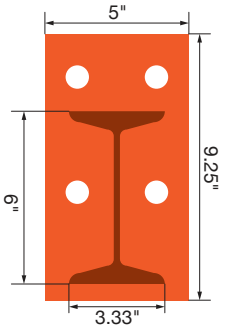
ARM H23 S5"X10.0U, S6"X12.5U

These arms consist of two pieces starting with profile section S3", S4", S5" or S6", with a connection plate with four holes that will connect the arm to the column using (4) Bolts ¾ X 2" G5 Z (U0074780) and (4) Nuts ¾-10 G5 Z (U0074695).

- Compatible with Heavy-Duty Columns: W8"X18, W8"X24, W10"X26 and W12"X30.
- Available in standard Orange finish (RAL 2001).
- Standard lengths are: 24", 36", 48", 60" and 72".



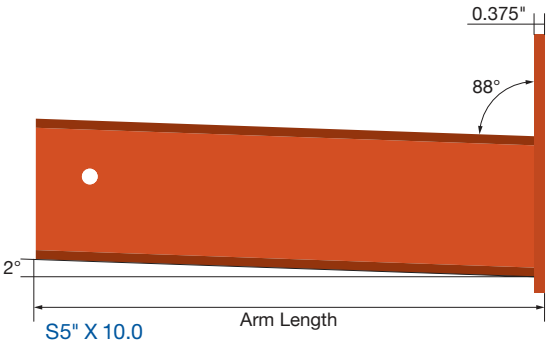
S5" X 10.0



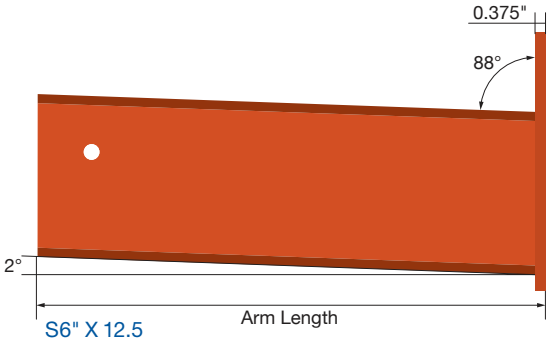
S6" X 12.5

ARMS H23 S5"X 10.0 U 2'

- Arm Height: 3", 4", 5" or 6"
- Pounds per foot (weight) 3"=5.7, 4"=7.7, 5"=10 and 6"=12.5
- Arm Length (ft)

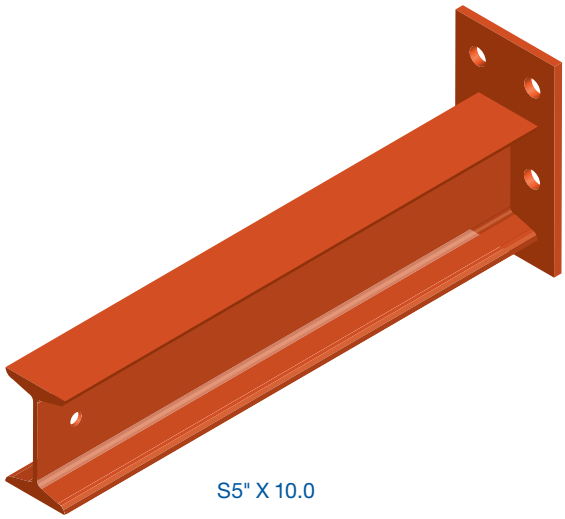


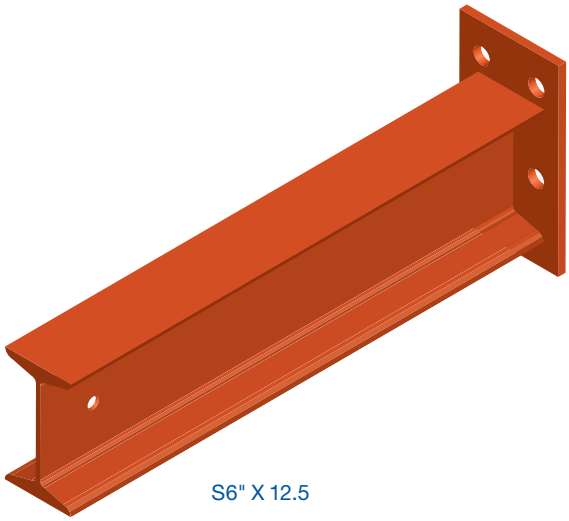
S5" X 10.0



S6" X 12.5

H23 Arm Part Numbers				
Arm Length	**S3" X 5.7**	**S4" X 7.7**	**S5" X 10.0**	**S6" X 12.5**
2'	T0210864	T0210869	T0210874	T0210879
3'	T0210865	T0210870	T0210875	T0210880
4'	T0210866	T0210871	T0210876	T0210881
5'	T0210867	T0210872	T0210877	T0210882
6'	T0210868	T0210873	T0210878	T0210883


S5" X 10.0


S6" X 12.5

STRUCTURAL CANTILEVER PIPE STOP ASSEMBLY

PIPE SOCKET U H23 - T0210925

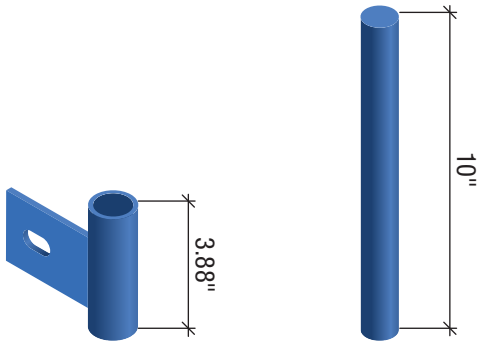
The pipe socket serves as a holder for the Stop Mobile Round U H23. The socket can be attached to the arms or base using (1) Bolt ½-13 X 1 ½" HHC G5 Z (U0074603) and (1) Nut ½-13 HEX Z (U0077338).

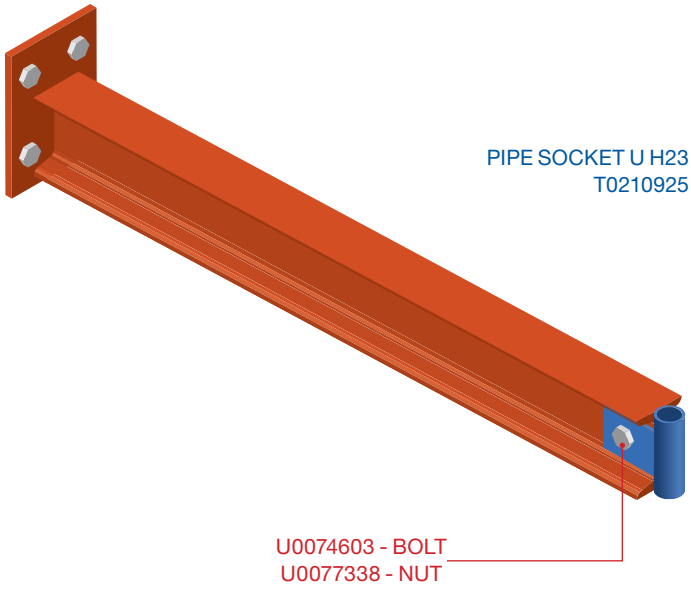
• Available in standard Blue finish (RAL 5003).

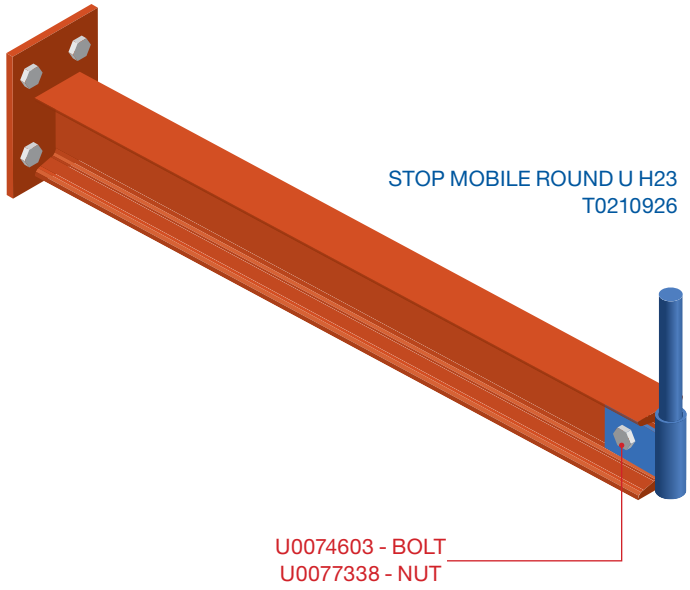
STOP MOBILE ROUND U H23 - T0210926

Metallic cylinder with a 1" diameter and 10" length. Inserted into the Pipe Socket H23 U in order to act as a load stopper.

• Available in standard Blue finish (RAL 5003).



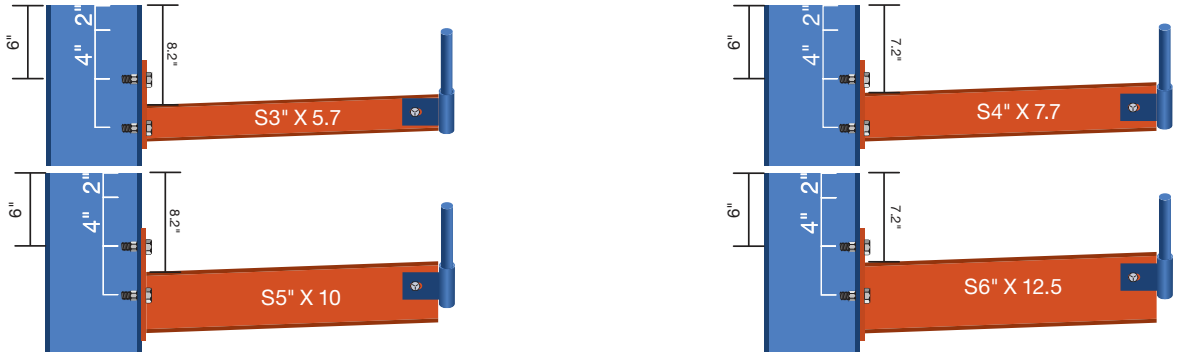




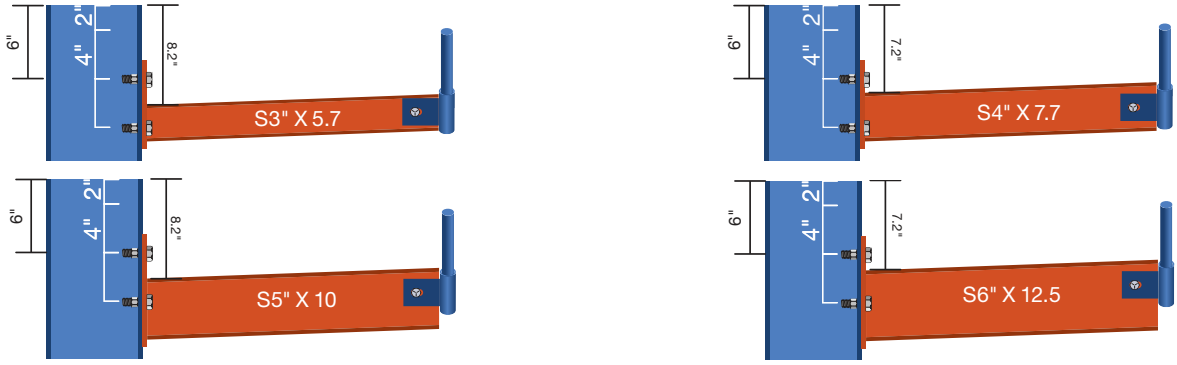
MINIMUM ELEVATIONS

COLUMN W8" X 18

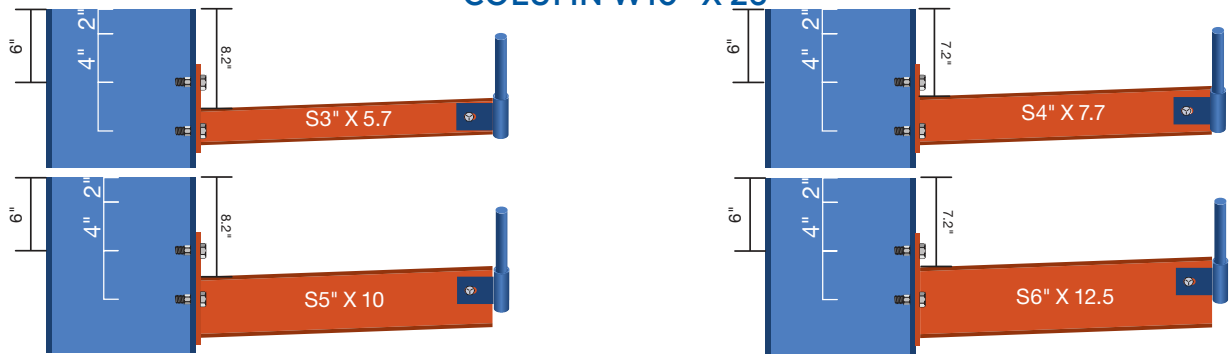
Distance from highest arm level to top of column.



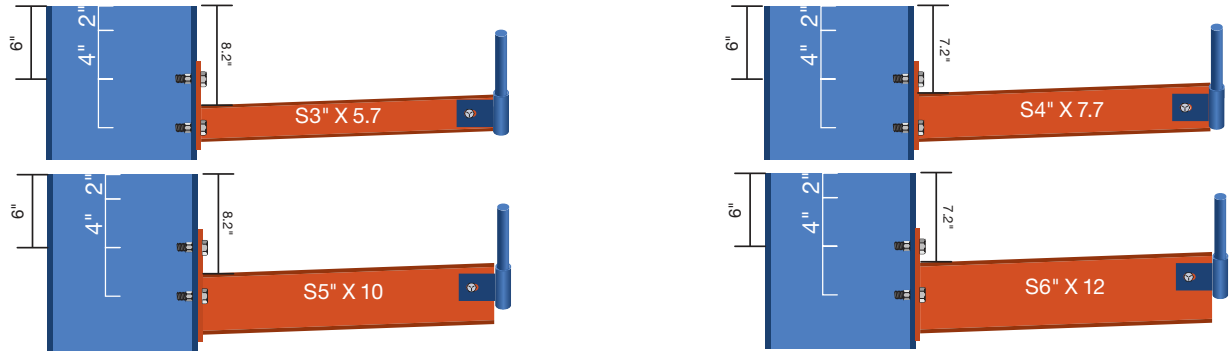
COLUMN W8" X 24



COLUMN W10" X 26



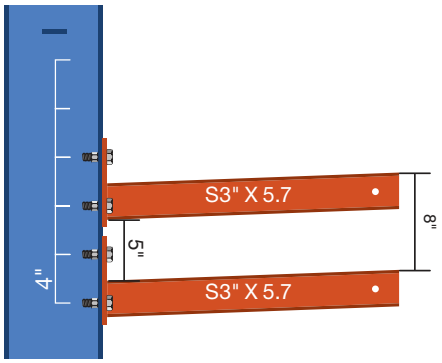
COLUMN W12" X 30

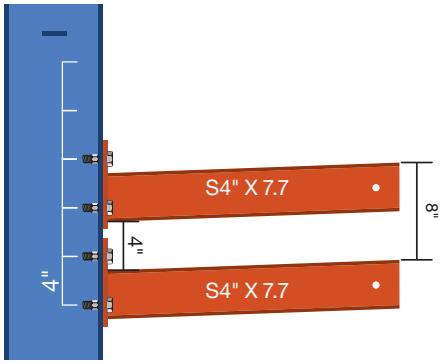


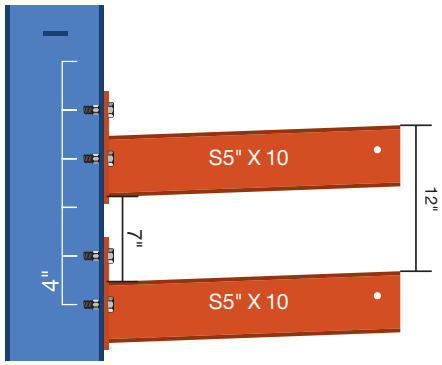
MINIMUM ELEVATIONS

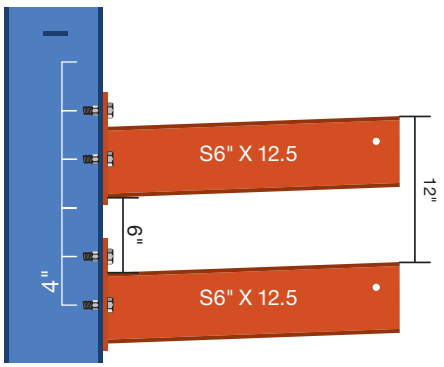
COLUMN W8" X 18

Distance between arms without pipe stop.



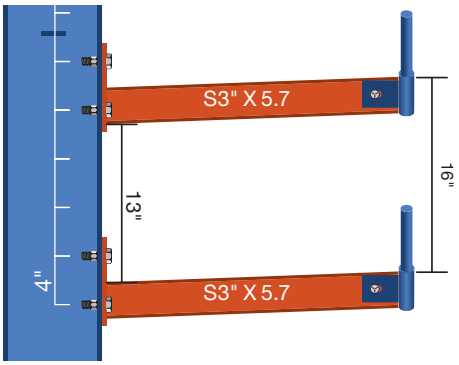


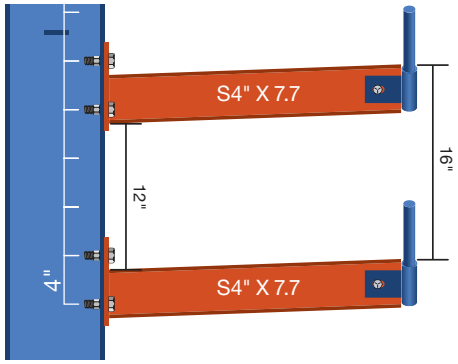


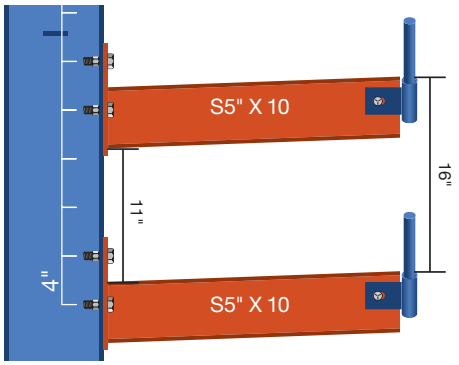


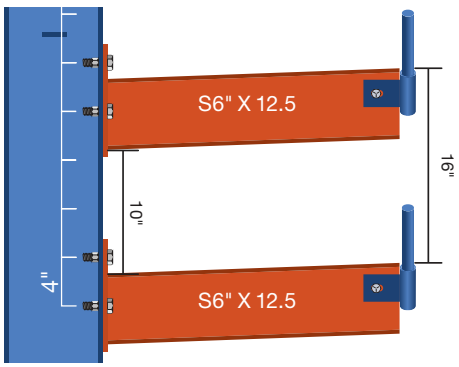
COLUMN W8" X 18

Distance between arms with pipe stop.





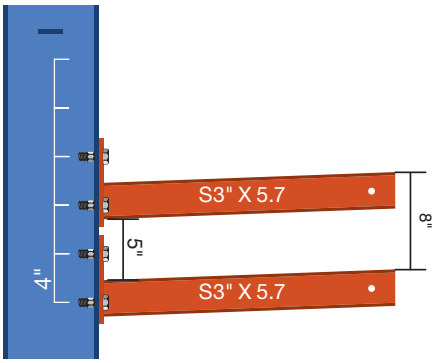


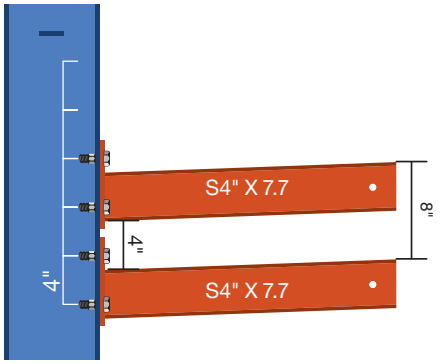


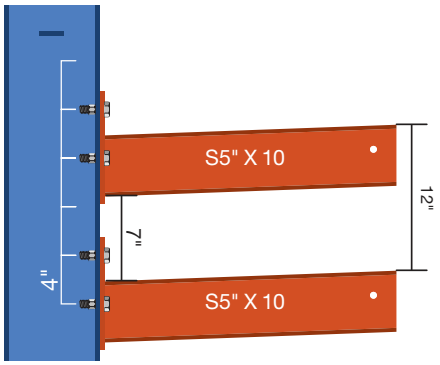
MINIMUM ELEVATIONS

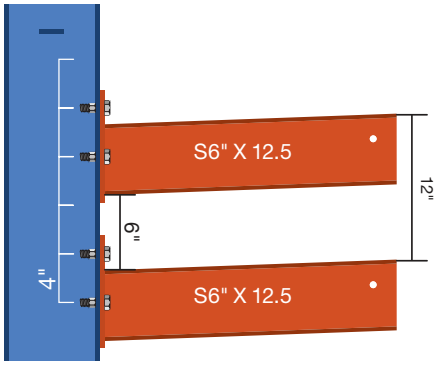
COLUMN W8" X 18

Distance between arms without pipe stop.



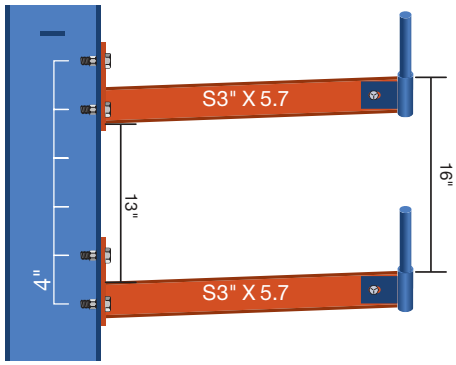


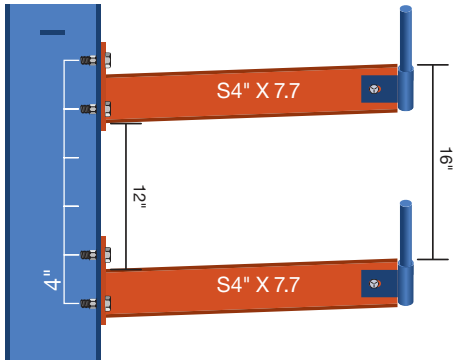


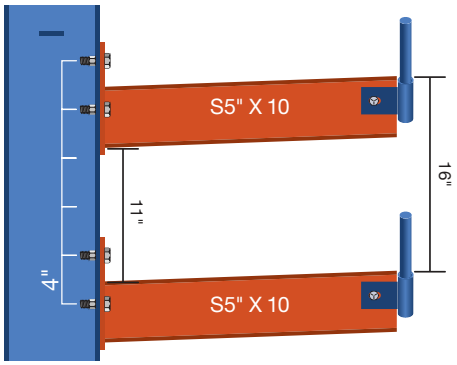


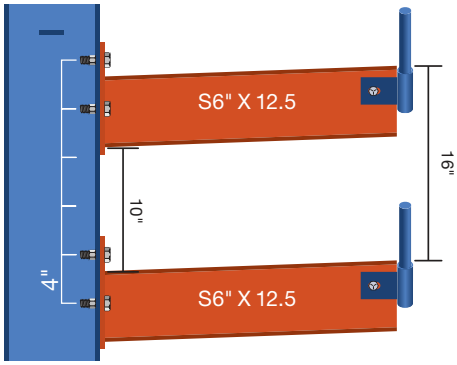
COLUMN W8" X 18

Distance between arms with pipe stop.





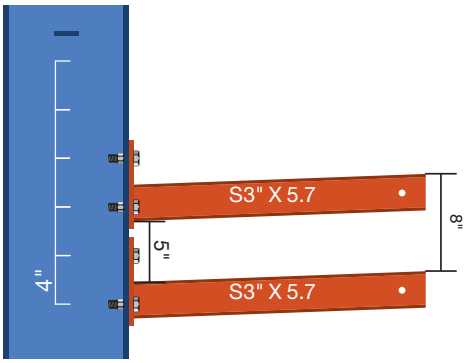


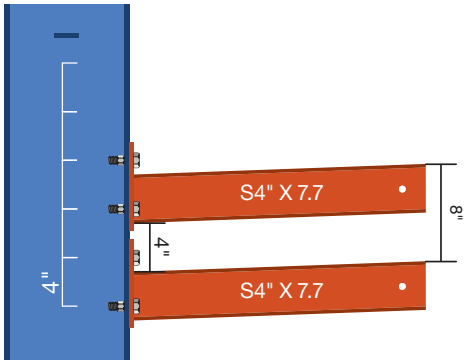


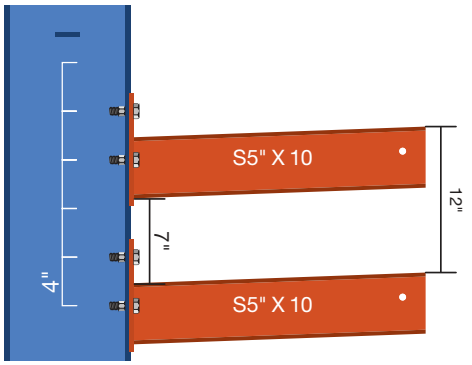
MINIMUM ELEVATIONS

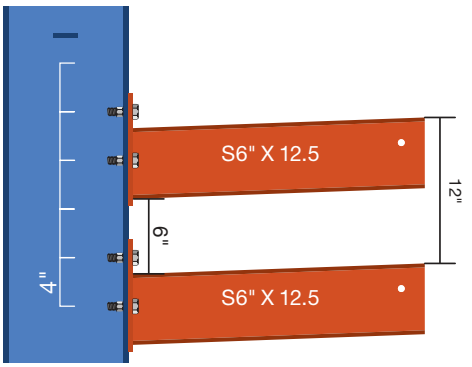
COLUMN W10" X 26

Distance between arms without pipe stop.



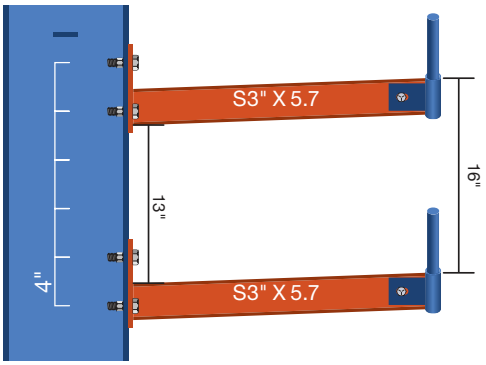


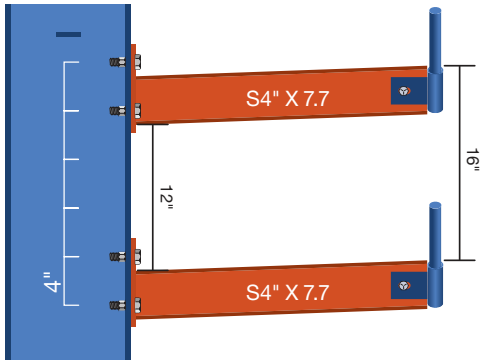


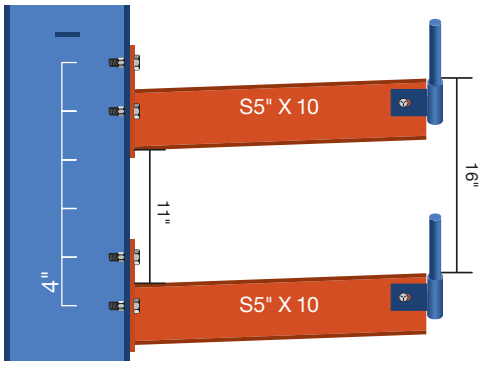


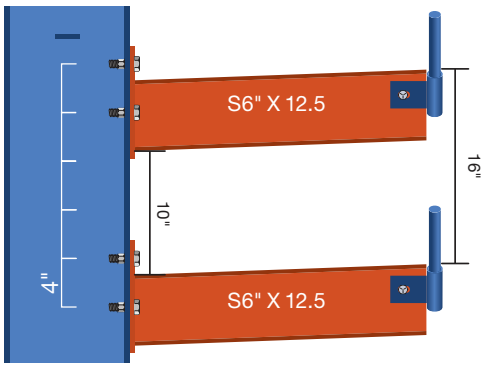
COLUMN W10" X 26

Distance between arms with pipe stop.





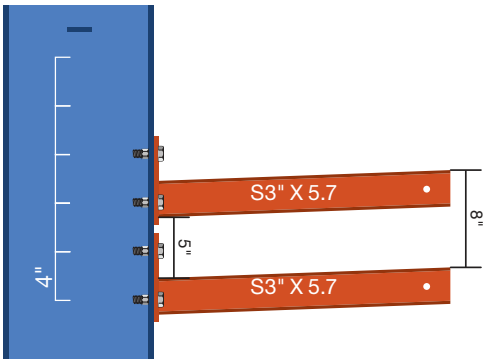


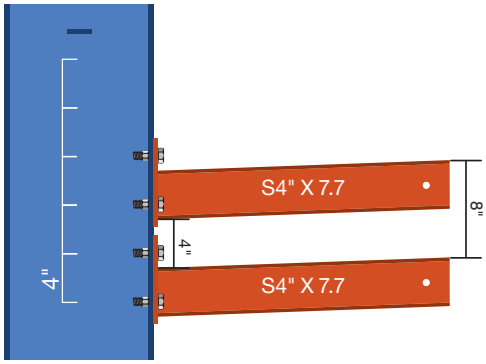


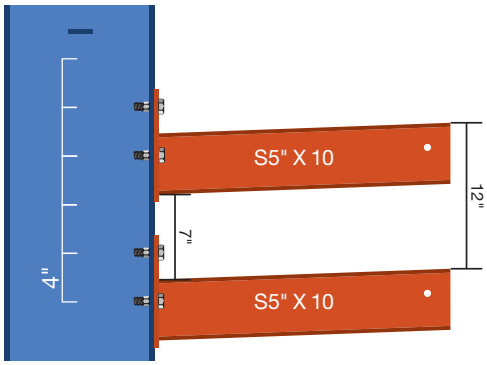
MINIMUM ELEVATIONS

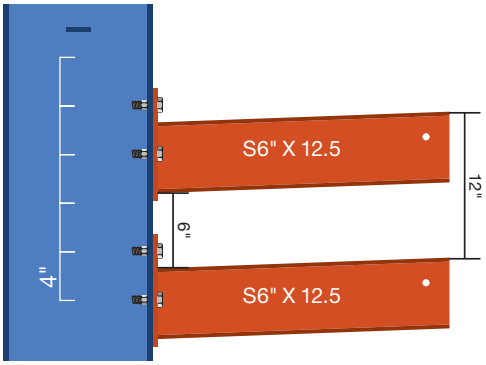
COLUMN W12" X 30

Distance between arms without pipe stop.



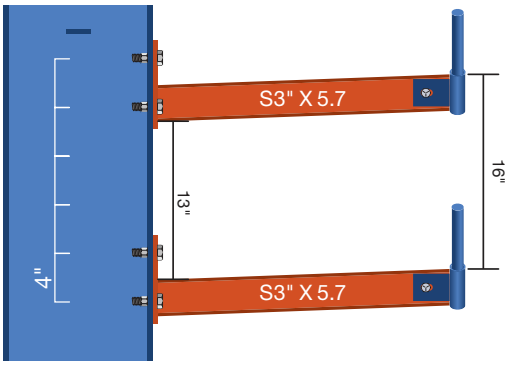


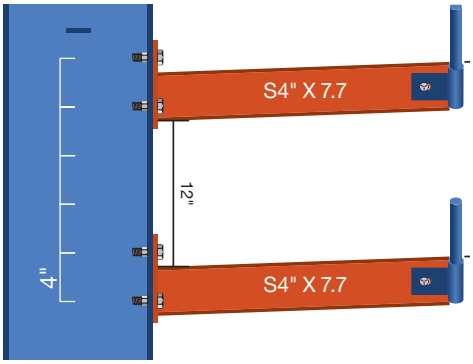


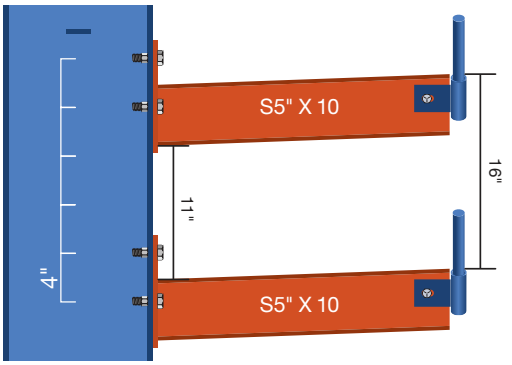


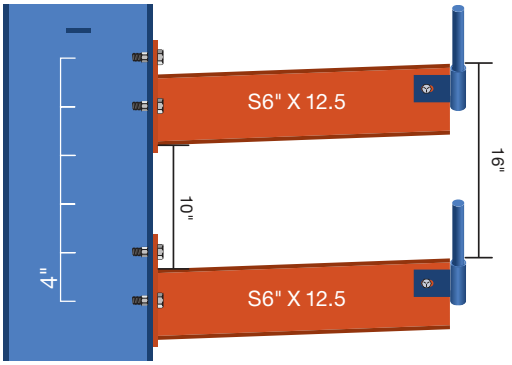
COLUMN W12" X 30

Distance between arms with pipe stop.





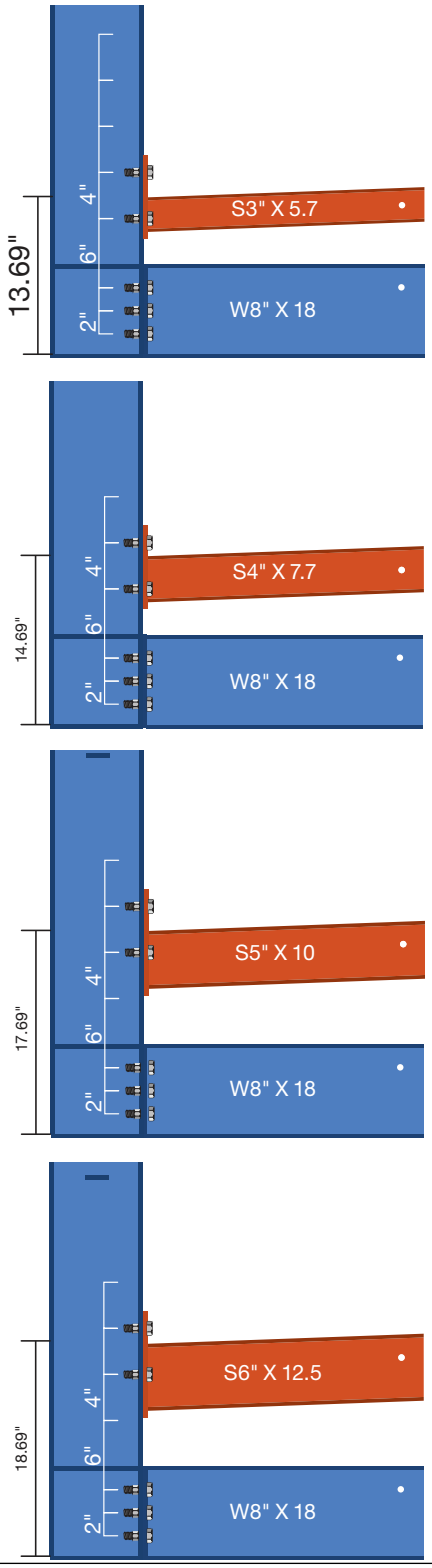




MINIMUM ELEVATIONS

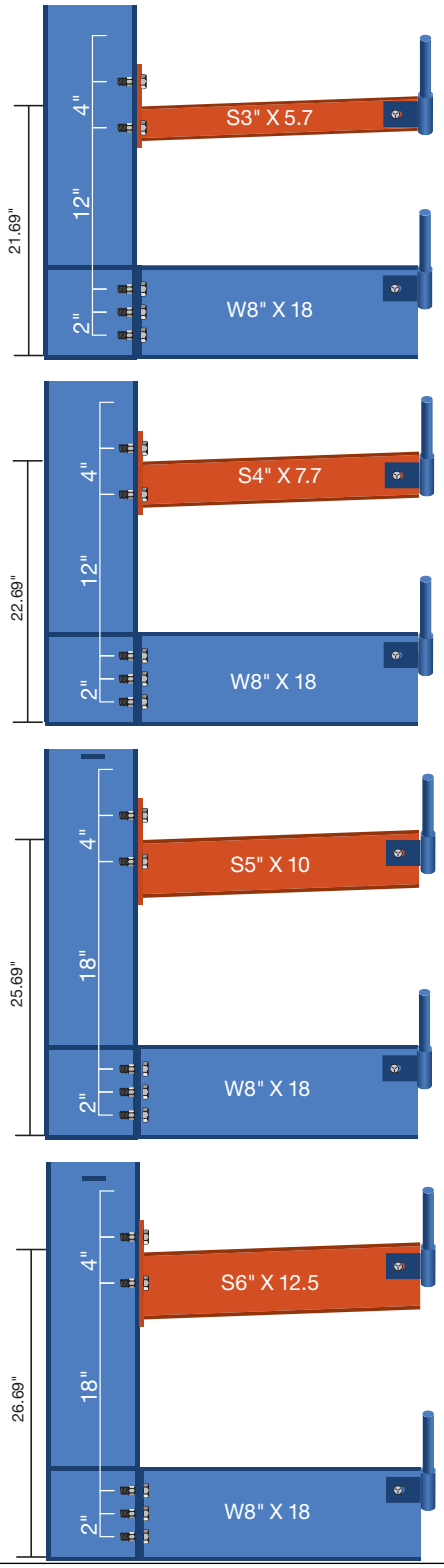
COLUMN W8" X 18

Distance from floor to first arm without pipe stop.



COLUMN W8" X 18

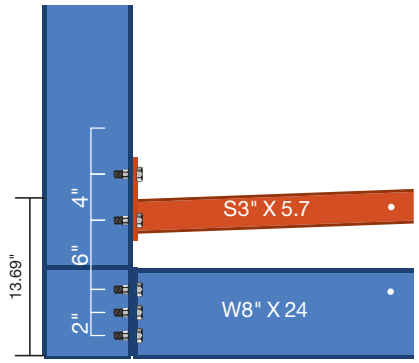
Distance from floor to first arm with pipe stop.

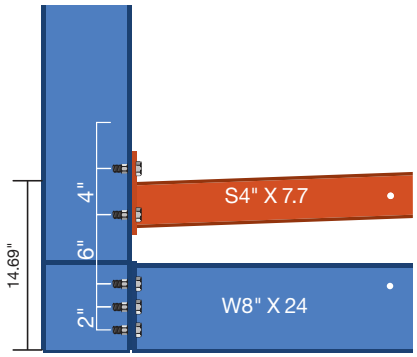


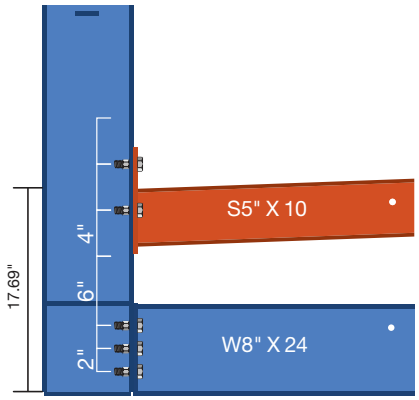
MINIMUM ELEVATIONS

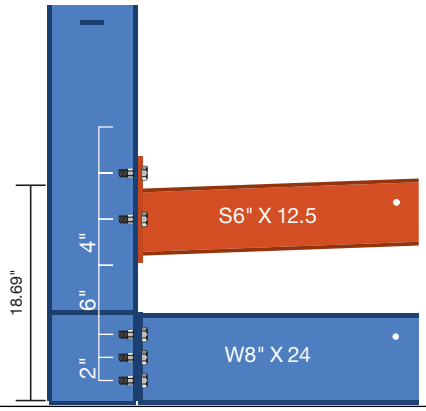
COLUMN W8" X 24

Distance from floor to first arm without pipe stop.



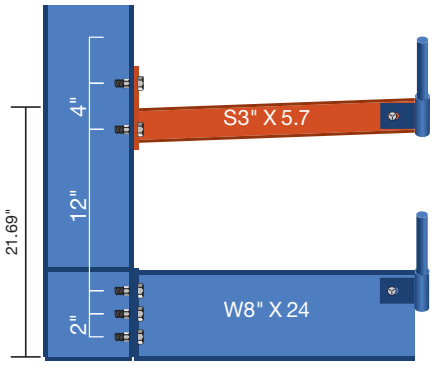


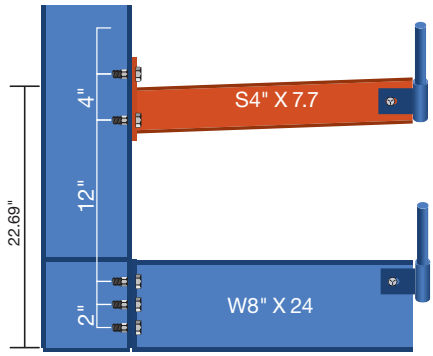


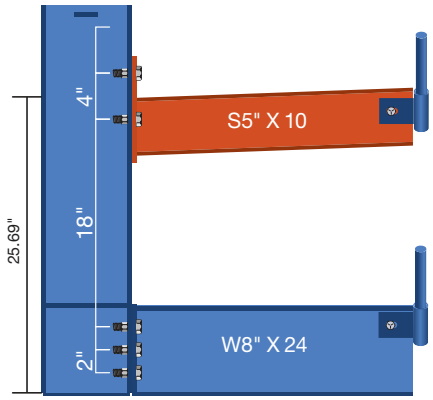


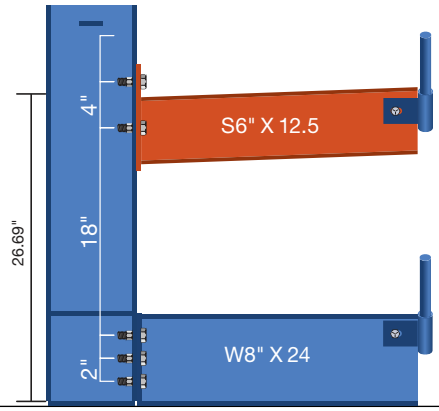
COLUMN W8" X 24

Distance from floor to first arm with pipe stop.





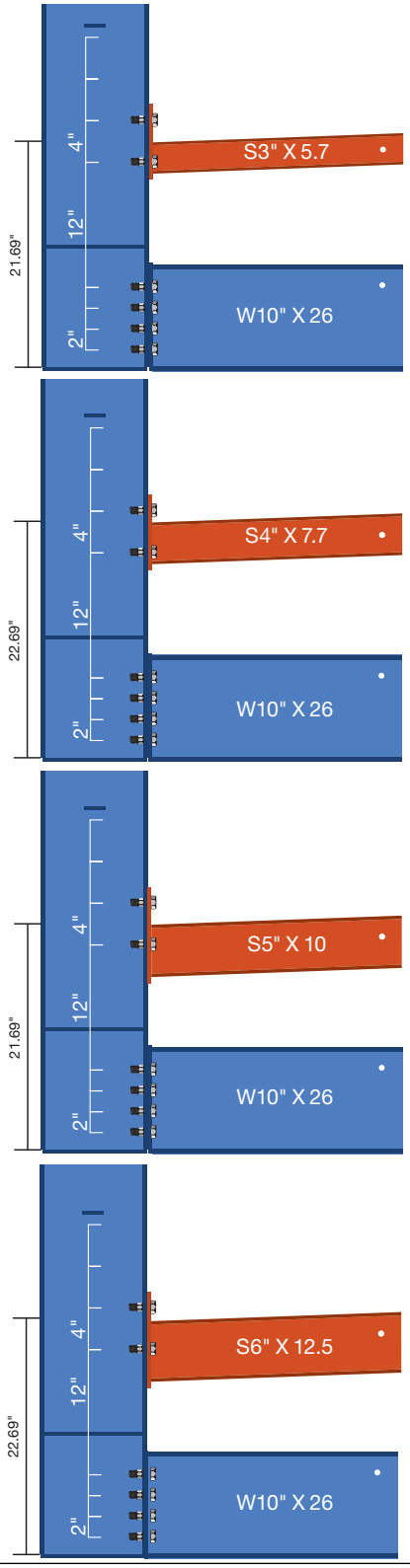




MINIMUM ELEVATIONS

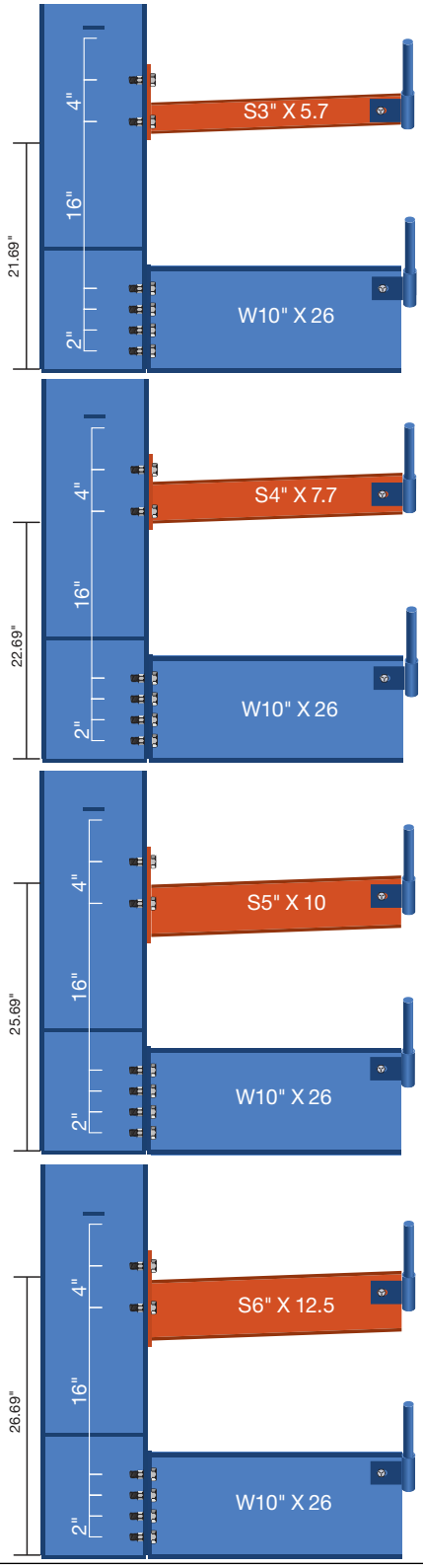
COLUMN W10" X 26

Distance from floor to first arm without pipe stop.



COLUMN W10" X 26

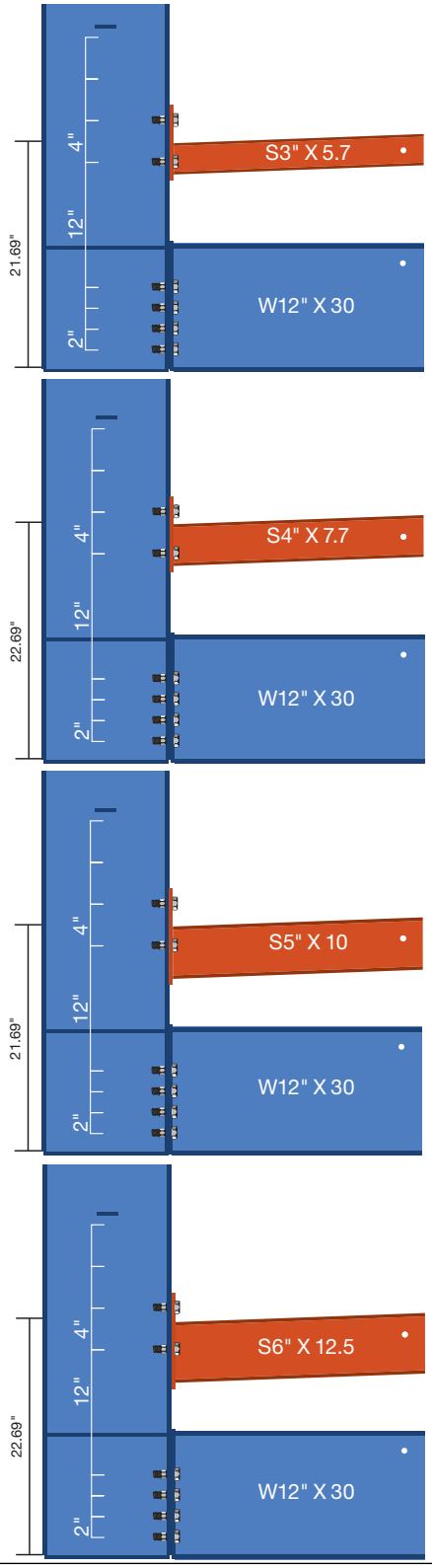
Distance from floor to first arm with pipe stop.



MINIMUM ELEVATIONS

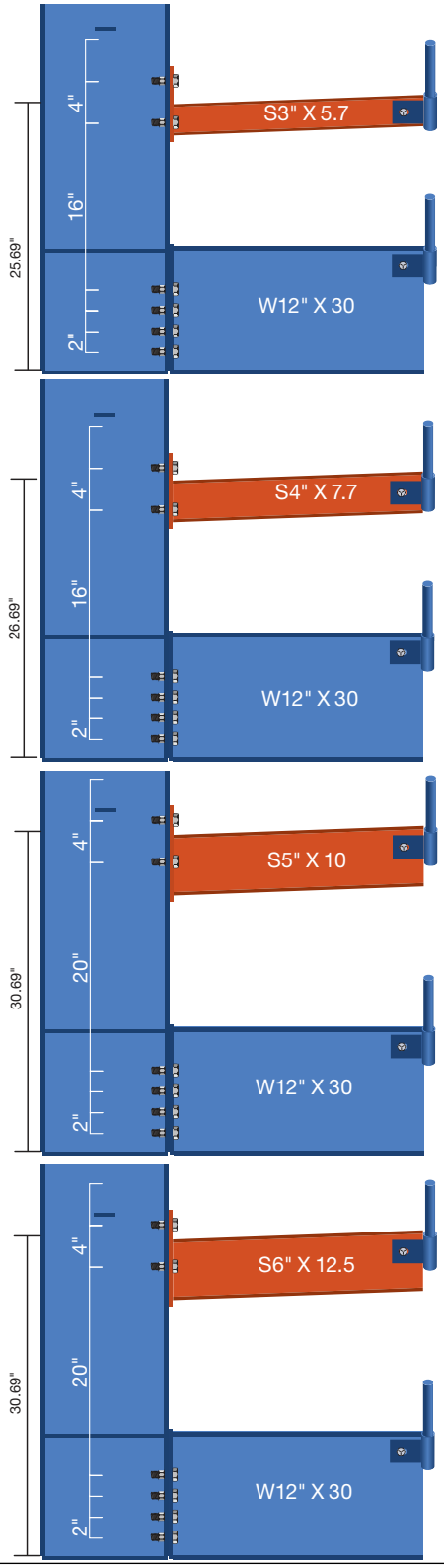
COLUMN W12" X 30

Distance from floor to first arm without pipe stop.



COLUMN W12" X 30

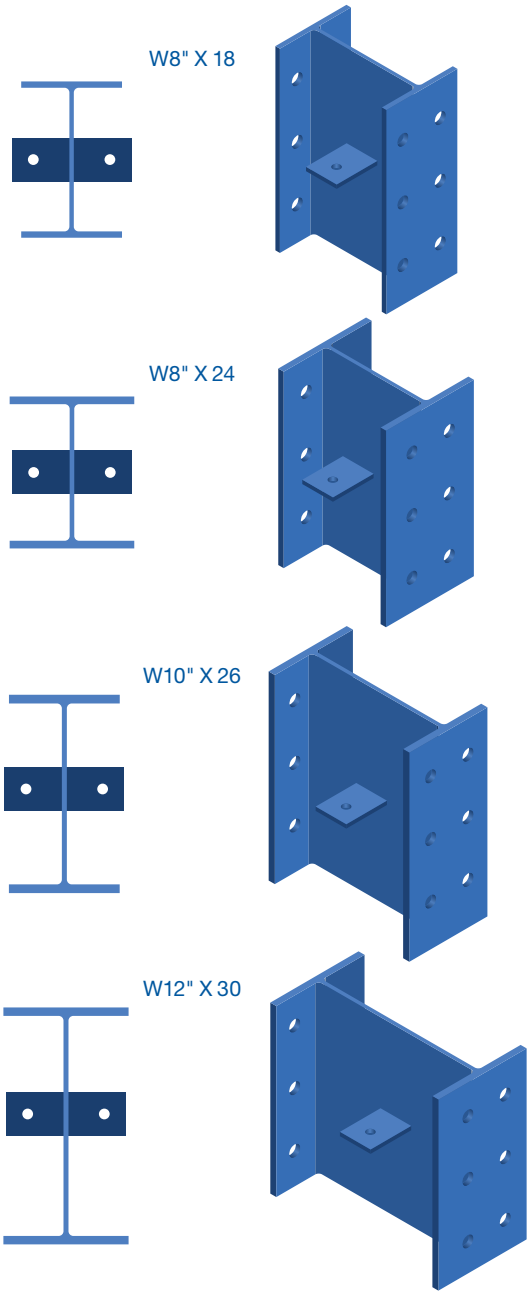
Distance from floor to first arm with pipe stop.

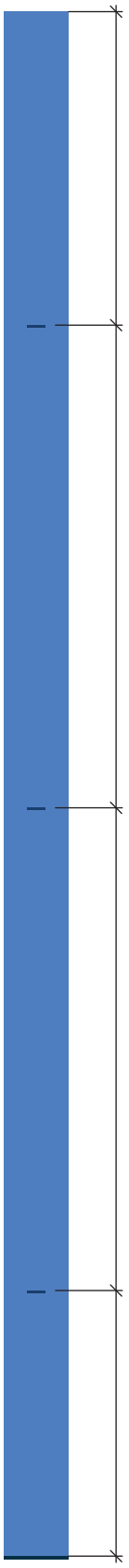


HORIZONTAL BRACING

WELDED BRACING CLIPS

Welded bracing clips are used to connect the Horizontal Bracing into the H23 Cantilever columns. The first plate is welded at a height of 48" (except for the 8' column, where it is welded at 33"), subsequently the plates will be welded to the column every 60".





BRACING CLIP DISTANCES				
Column Height	No. of clips	A	B	C
8' (96")	2	33"	60"	1"
10' (120")	2	48"	60"	10"
12' (144")	2	48"	60"	34"
14' (168")	2	48"	60"	58"
16' (192")	3	48"	60"	22"
18' (216")	3	48"	60"	46"
20' (240")	4	48"	60"	6"
22' (264")	4	48"	60"	34"
24' (288")	4	48"	60"	58"
26' (312")	5	48"	60"	22"
28' (336")	5	48"	60"	46"
30' (360")	6	48"	60"	10"
32' (384")	6	48"	60"	34"
34' (408")	6	48"	60"	58"
36' (432")	7	48"	60"	22"
38' (456")	7	48"	60"	46"

HORIZONTAL BRACING

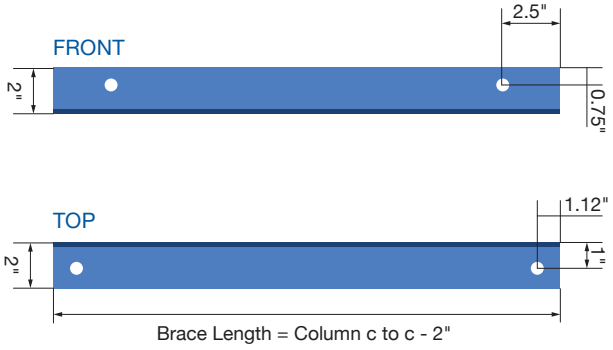
HORIZONTAL U L 2X2X3/16

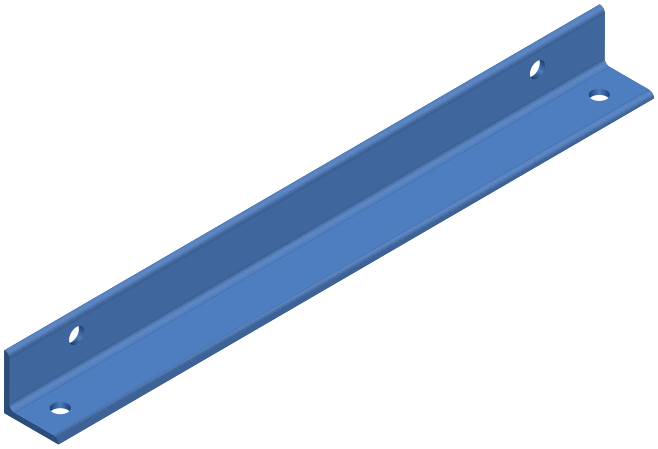
Horizontal brace for H23 Cantilever

Available in standard Mecalux Blue finish (RAL 5003).

Connects to the H23 bracing clips using:
(2) Bolts ½ X 1 ⅝" D933 G5 B T.2A (T0058504).

HORIZONTAL U L 2 X 2 X 3/16 Part Numbers		
Length	**Center to Center**	**Part Number**
22"	24"	T0210895
28"	30"	T0210896
34"	36"	T0210897
40"	42"	T0210898
46"	48"	T0210899
52"	54"	T0210900
58"	60"	T0210901
64"	66"	T0210902
70"	72"	T0210903
82"	84"	T0210904
94"	96"	T0210905





BRACING REQUIREMENTS		
Column Height	**Horizontal braces per bay**	**"X" braces per bay**
8', 10', and 12'	2	1
16'	3	1
18', 20', 22' and 24'	4	2
26', 28', 30' and 32'	6	3
34', 36' and 38'	8	4

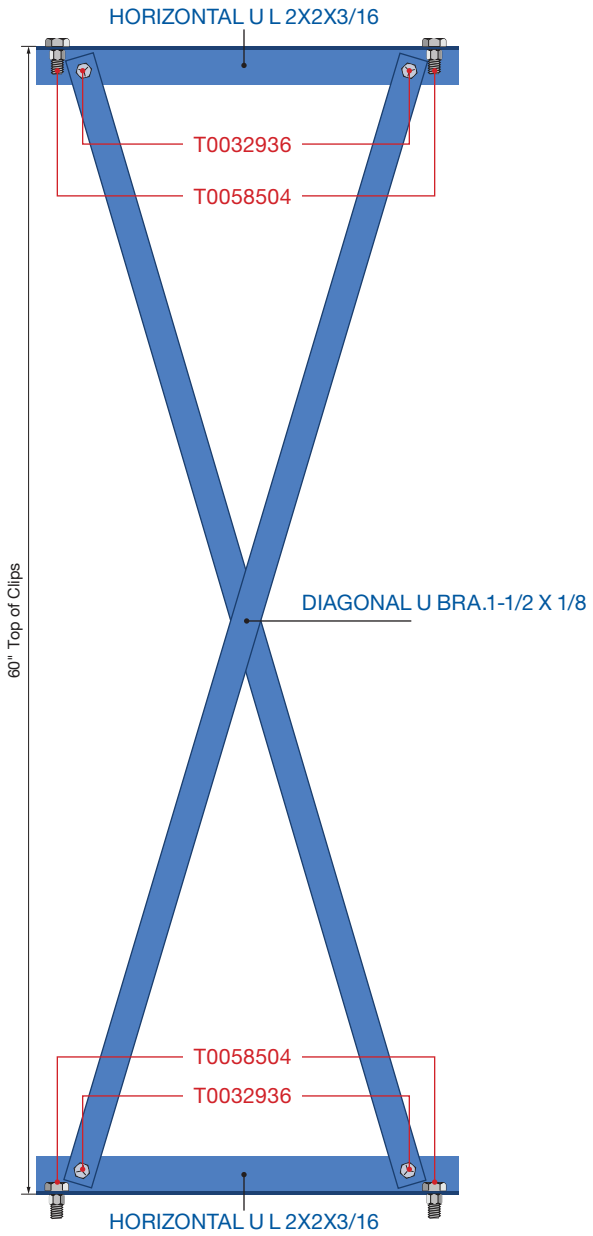
DIAGONAL BRACING

DIAGONAL U BRA.1-1/2X1/8

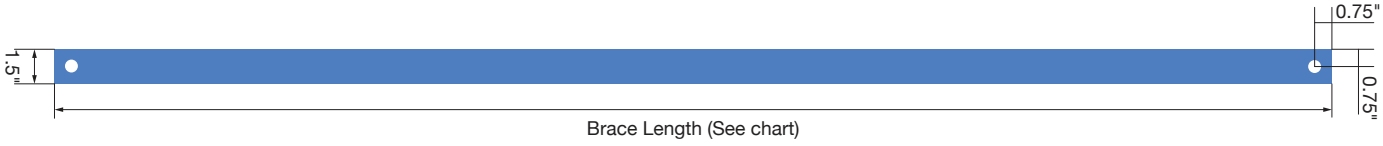
Diagonal brace for H23 Cantilever.

Available in standard Mecalux Blue finish (RAL 5003).

Connects to the H23 Horizonal U L Braces using:
(2) Bolts 1/2 X 1 3/16" D933 G5 B T.2A (T0032936).



DIAGONAL U BRA.1-1/2 X 1/8 Part Numbers		
Length	**Center to Center**	**Part Number**
61 7/32" (61.22")	24"	T0210884
63 3/16" (63.18")	30"	T0210885
65 11/16" (65.68")	36"	T0210886
68 19/32" (68.59")	42"	T0210887
71 29/32" (71.90")	48"	T0210888
75 9/16" (75.56")	54"	T0210889
79 17/32" (79.53")	60"	T0210890
83 23/32" (83.71")	66"	T0210891
88 1/8" (88.12")	72"	T0210892
97 17/32" (97.53")	84"	T0210893
107 11/32" (107.34")	96"	T0210894



BRACING REQUIREMENTS		
Column Height	**Horizontal braces per bay**	**"X" braces per bay**
8', 10', and 12'	2	1
16'	3	1
18', 20', 22' and 24'	4	2
26', 28', 30' and 32'	6	3
34', 36' and 38'	8	4

UPPER BRACING

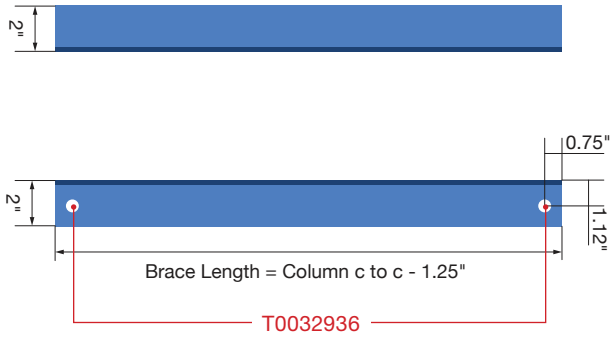
UPPER HORIZ. U L 2X2X3/16

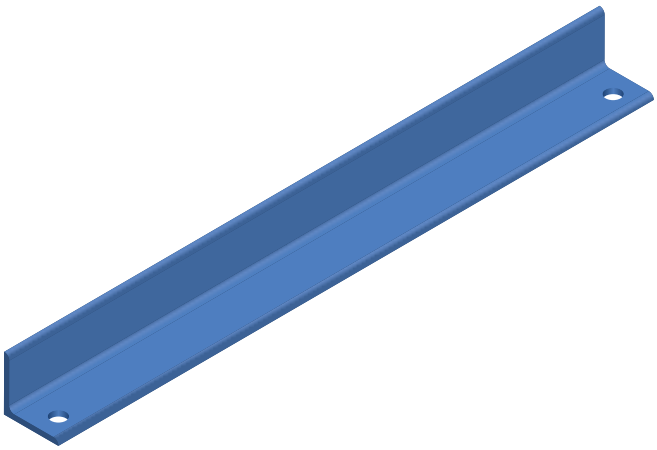
Horizontal brace for the top level of H23 Cantilever.

Available in standard Mecalux Blue finish (RAL 5003).

Connects to the H23 column using:
(2) Bolts 1/2 X 1 3/16" D933 G5 B T.2A (T0032936).

UPPER HORIZ. U L 2 X 2 X 3/16 Part Numbers		
Length	**Center to Center**	**Part Number**
22 3/4" (22.75")	24"	T0210906
28 3/4" (28.75")	30"	T0210907
34 3/4" (34.75")	36"	T0210908
40 3/4" (40.75")	42"	T0210909
46 3/4" (46.75")	48"	T0210910
52 3/4" (52.75")	54"	T0210911
58 3/4" (58.75")	60"	T0210912
64 3/4" (64.75")	66"	T0210913
70 3/4" (70.75")	72"	T0210914
82 3/4" (82.75")	84"	T0210915
94 3/4" (94.75")	96"	T0210916





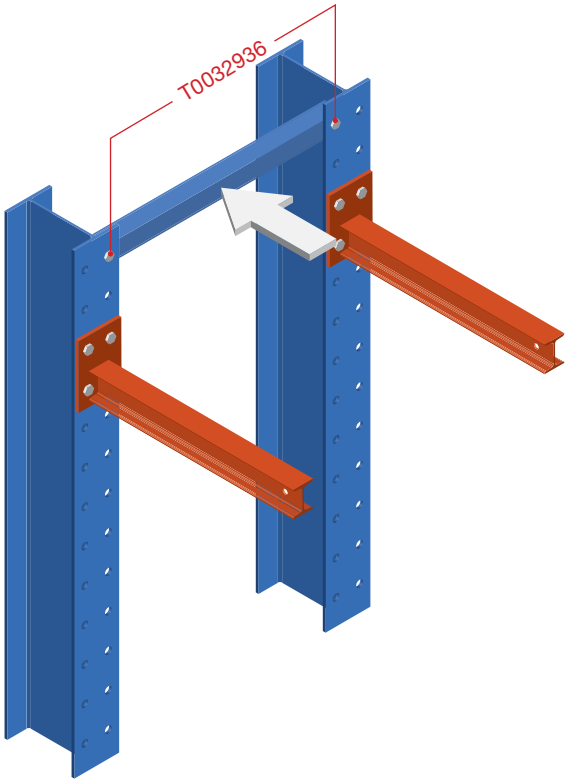
UPPER HORIZ. U L 2X2X3/16

BRACING REQUIREMENTS

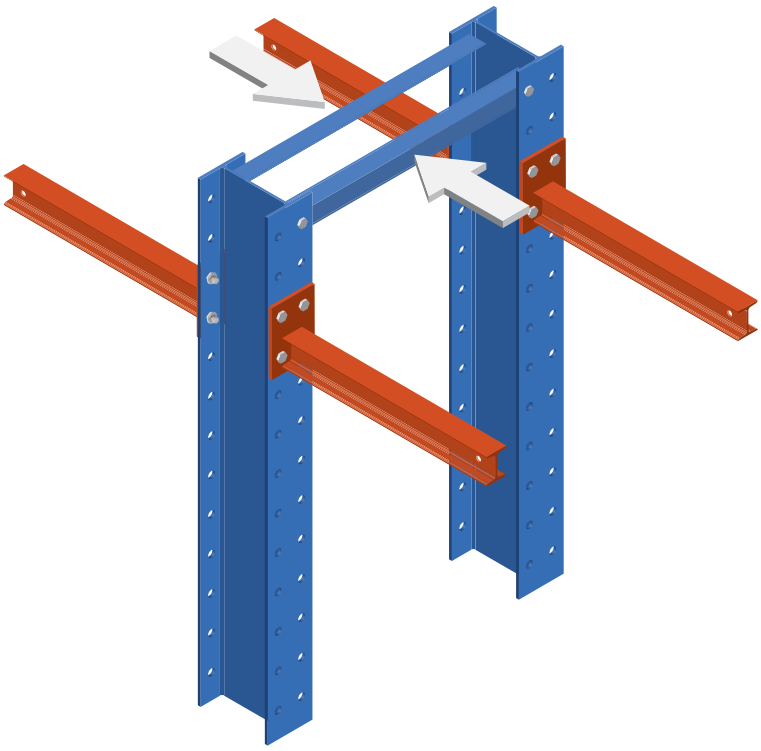
Horizontal brace for the top level of H23 Cantilever.

When connected to "L" Single sided columns, only 1 Upper Horizontal is required per bay, however, if "C" Double sided columns are to be used, 2 Upper Horizontal braces are required per bay.

SINGLE SIDED "L" COLUMNS
1 - UPPER HORIZONTAL PER BAY



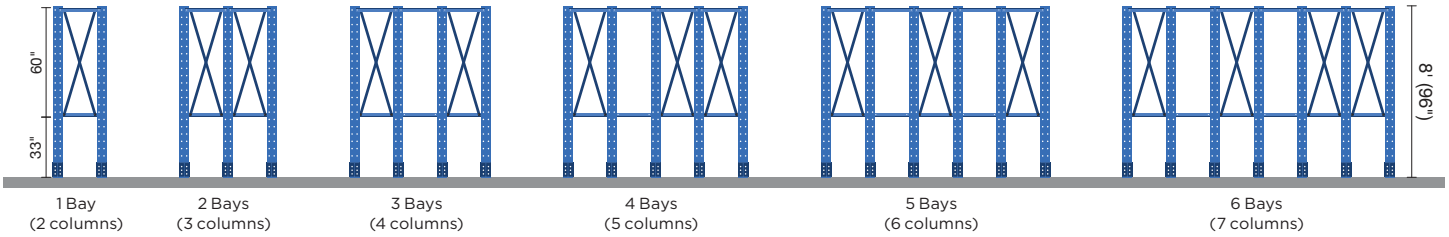
DOUBLE SIDED "C" COLUMNS
2 - UPPER HORIZONTAL PER BAY



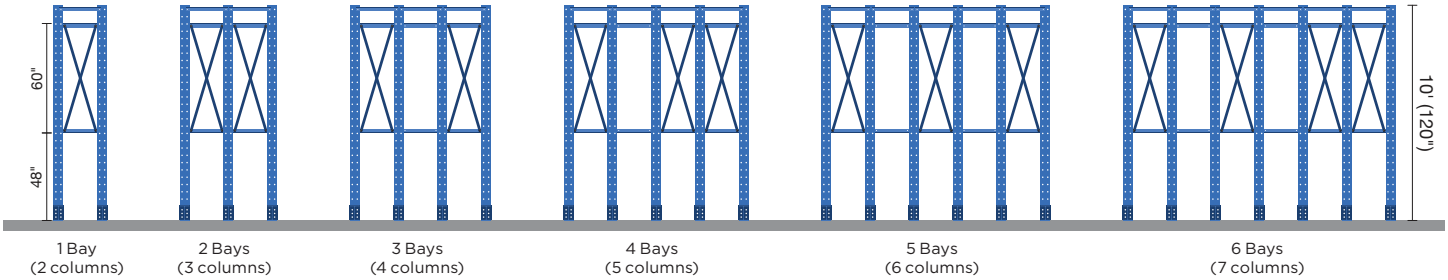
H23 BRACING SCHEMATICS

8′ (96″) COLUMNS

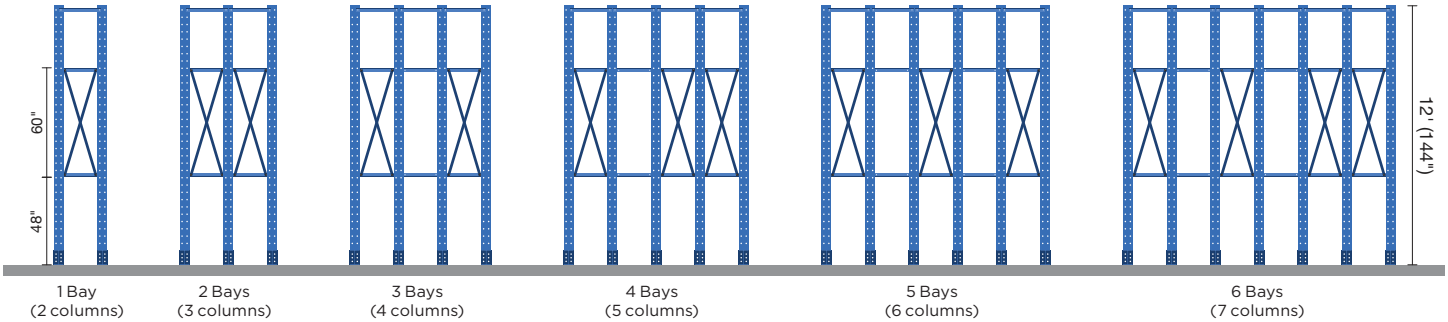
H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



10′ (120″) COLUMNS



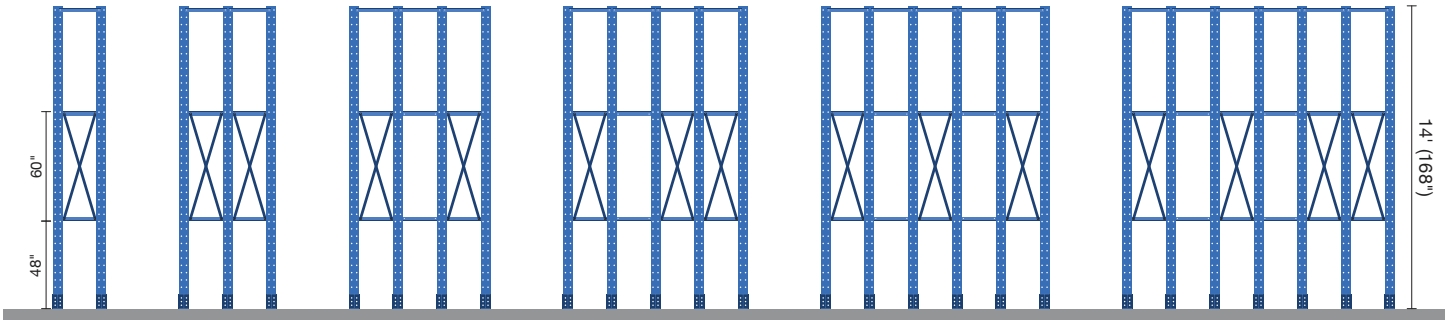
12′ (144″) COLUMNS



H23 BRACING SCHEMATICS

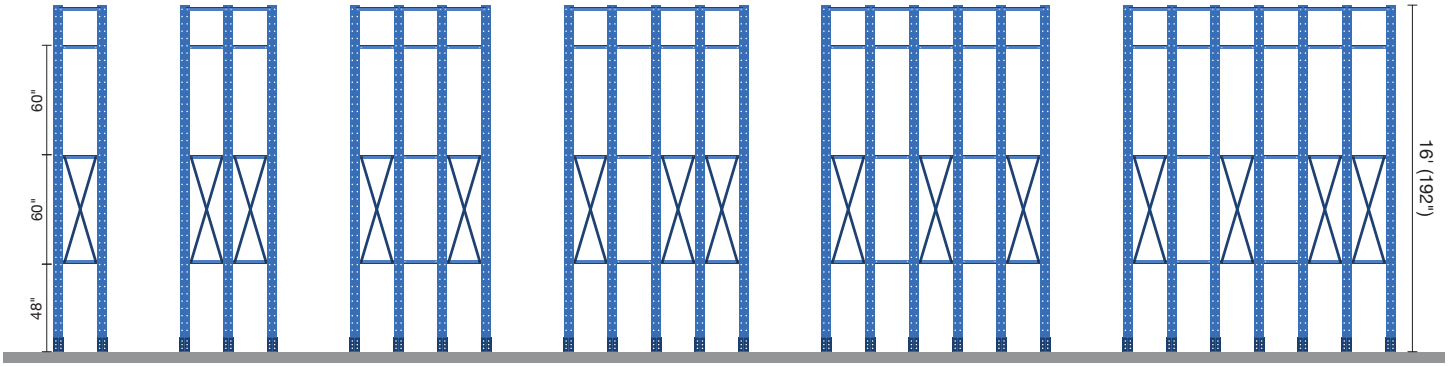
14′ (168″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



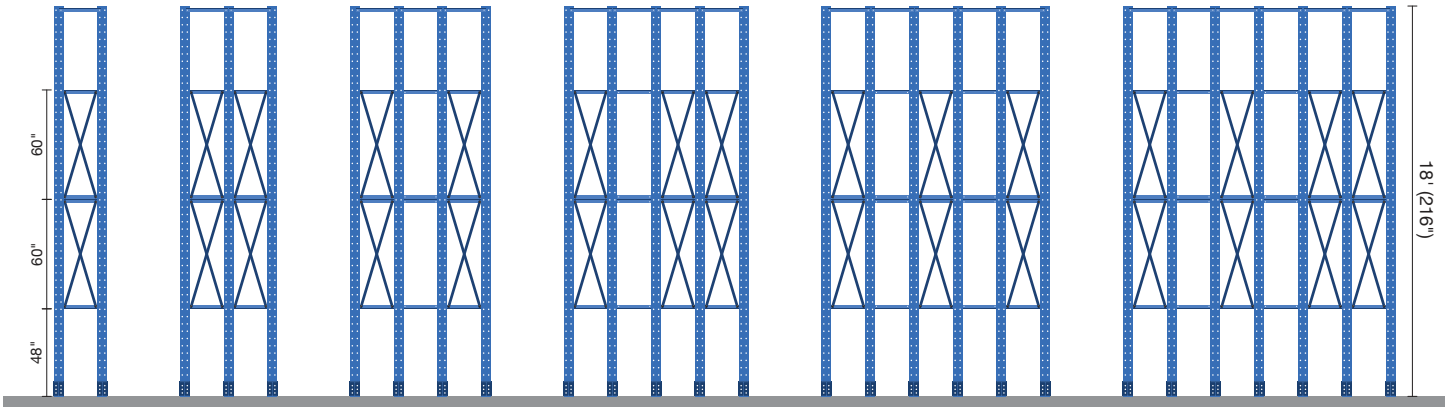
1 Bay (2 columns) | 2 Bays (3 columns) | 3 Bays (4 columns) | 4 Bays (5 columns) | 5 Bays (6 columns) | 6 Bays (7 columns)

16′ (192″) COLUMNS



1 Bay (2 columns) | 2 Bays (3 columns) | 3 Bays (4 columns) | 4 Bays (5 columns) | 5 Bays (6 columns) | 6 Bays (7 columns)

18′ (216″) COLUMNS

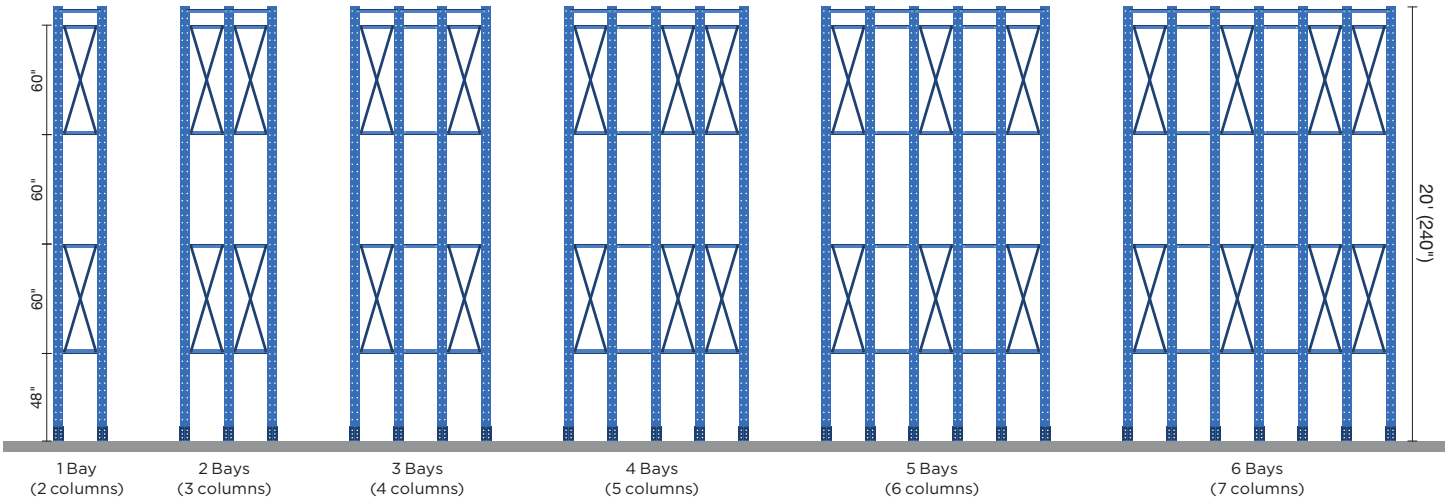


1 Bay (2 columns) | 2 Bays (3 columns) | 3 Bays (4 columns) | 4 Bays (5 columns) | 5 Bays (6 columns) | 6 Bays (7 columns)

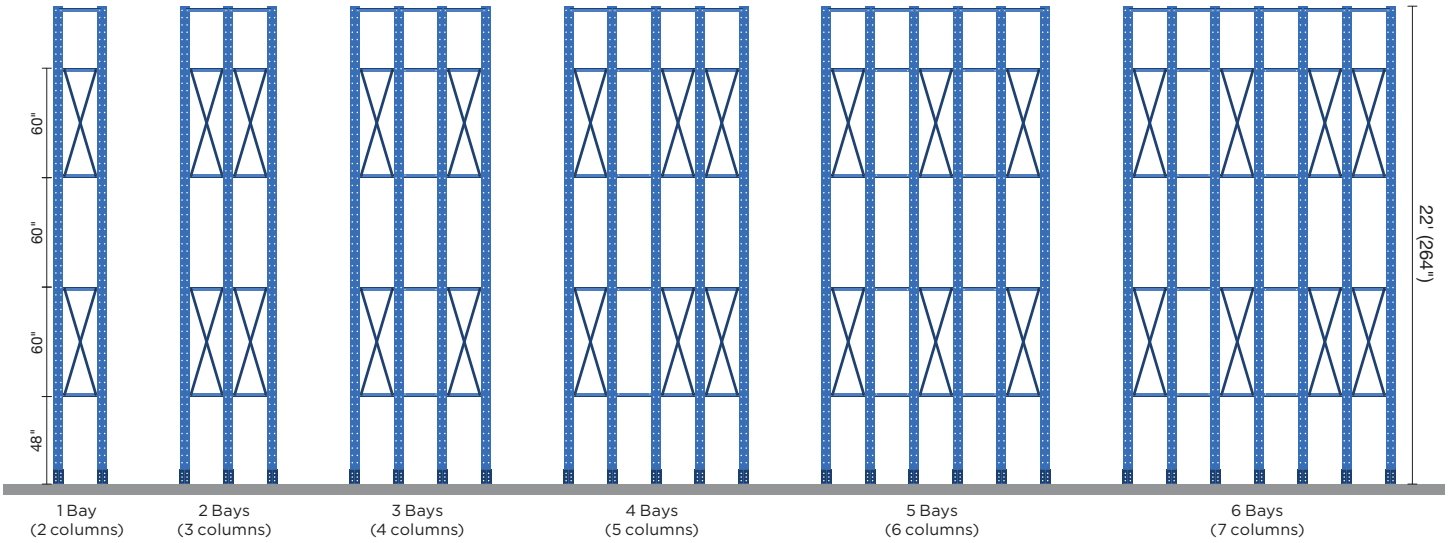
H23 BRACING SCHEMATICS

20′ (240″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



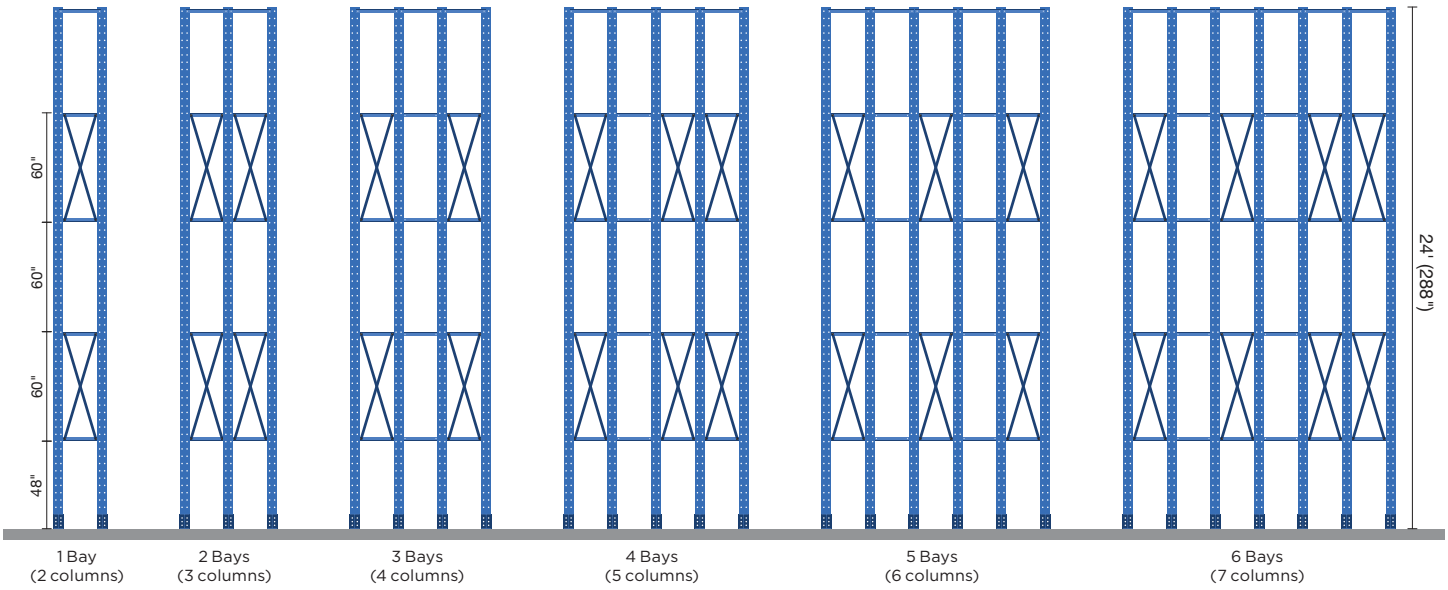
22′ (264″) COLUMNS



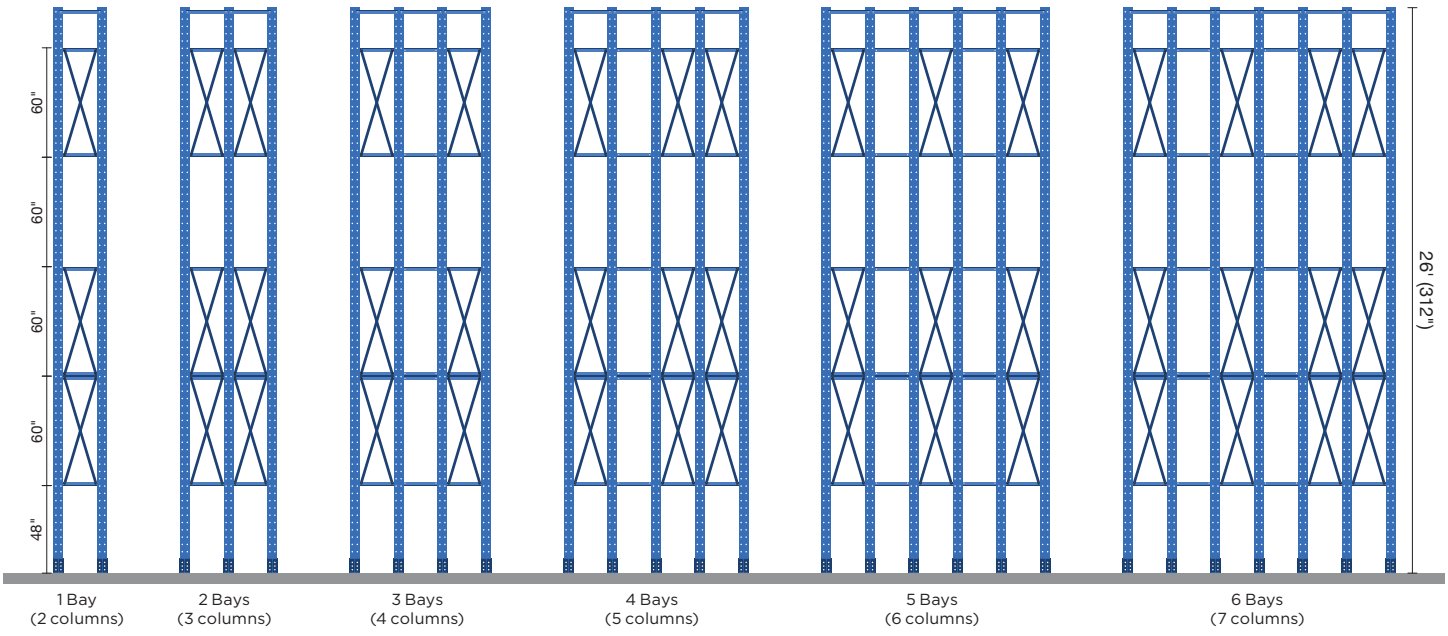
H23 BRACING SCHEMATICS

24′ (288″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



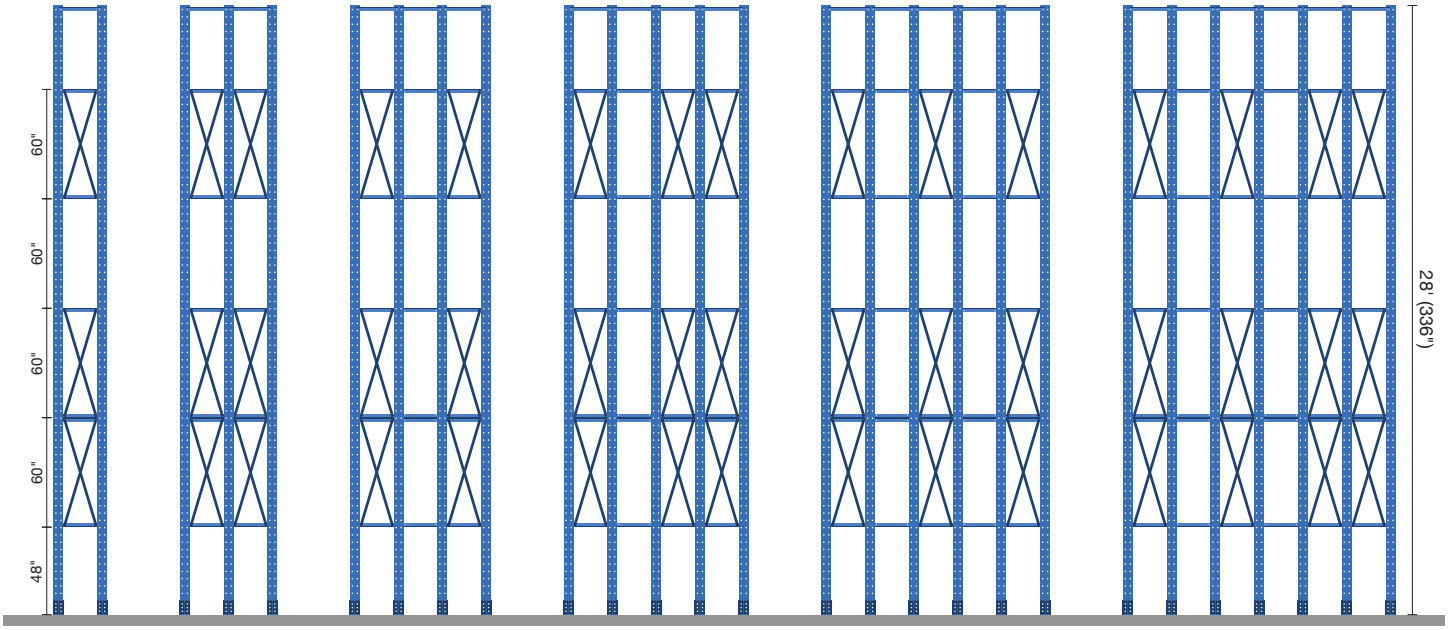
26′ (312″) COLUMNS



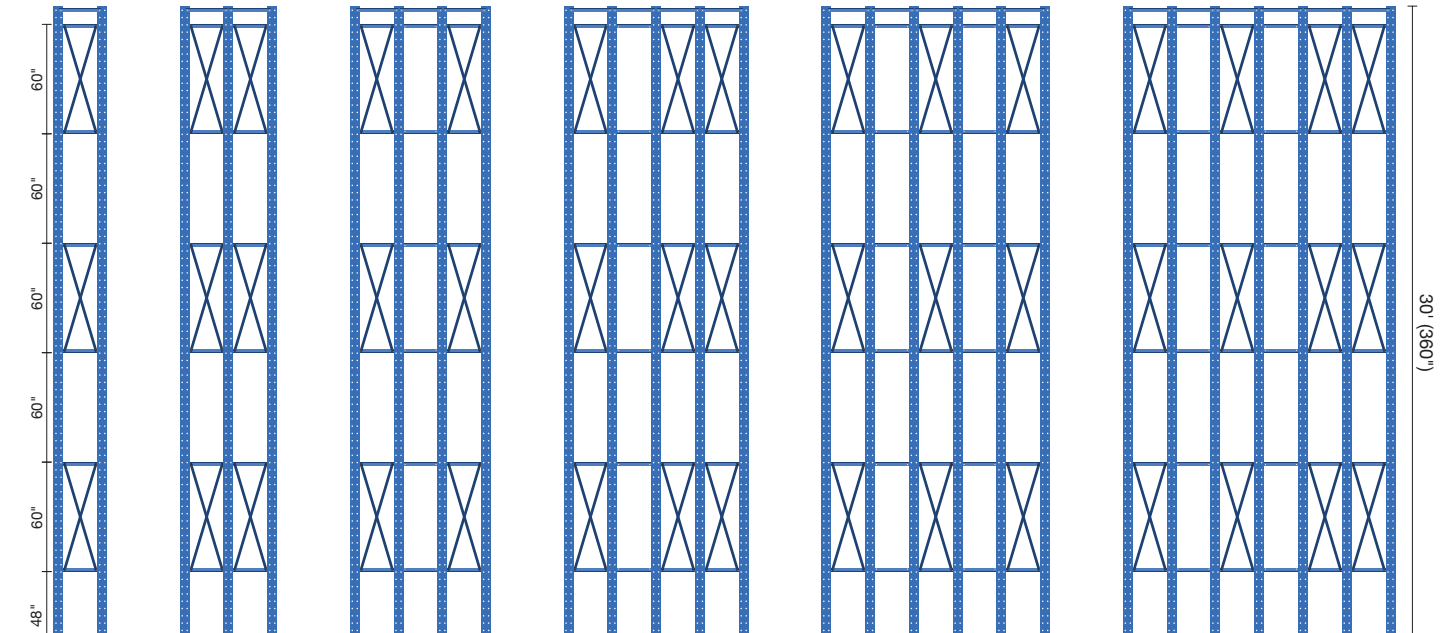
H23 BRACING SCHEMATICS

28′ (336″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



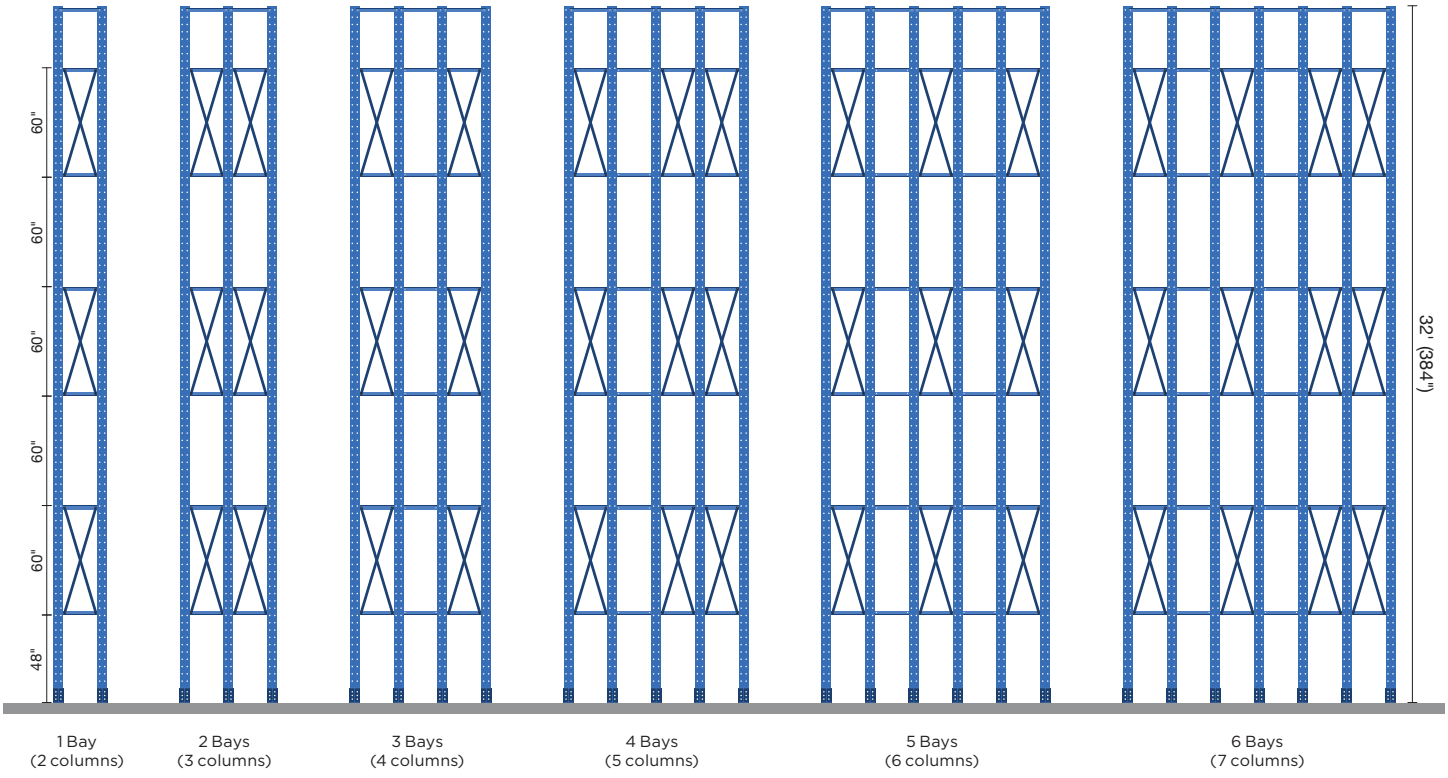
30′ (360″) COLUMNS



H23 BRACING SCHEMATICS

32′ (384″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.

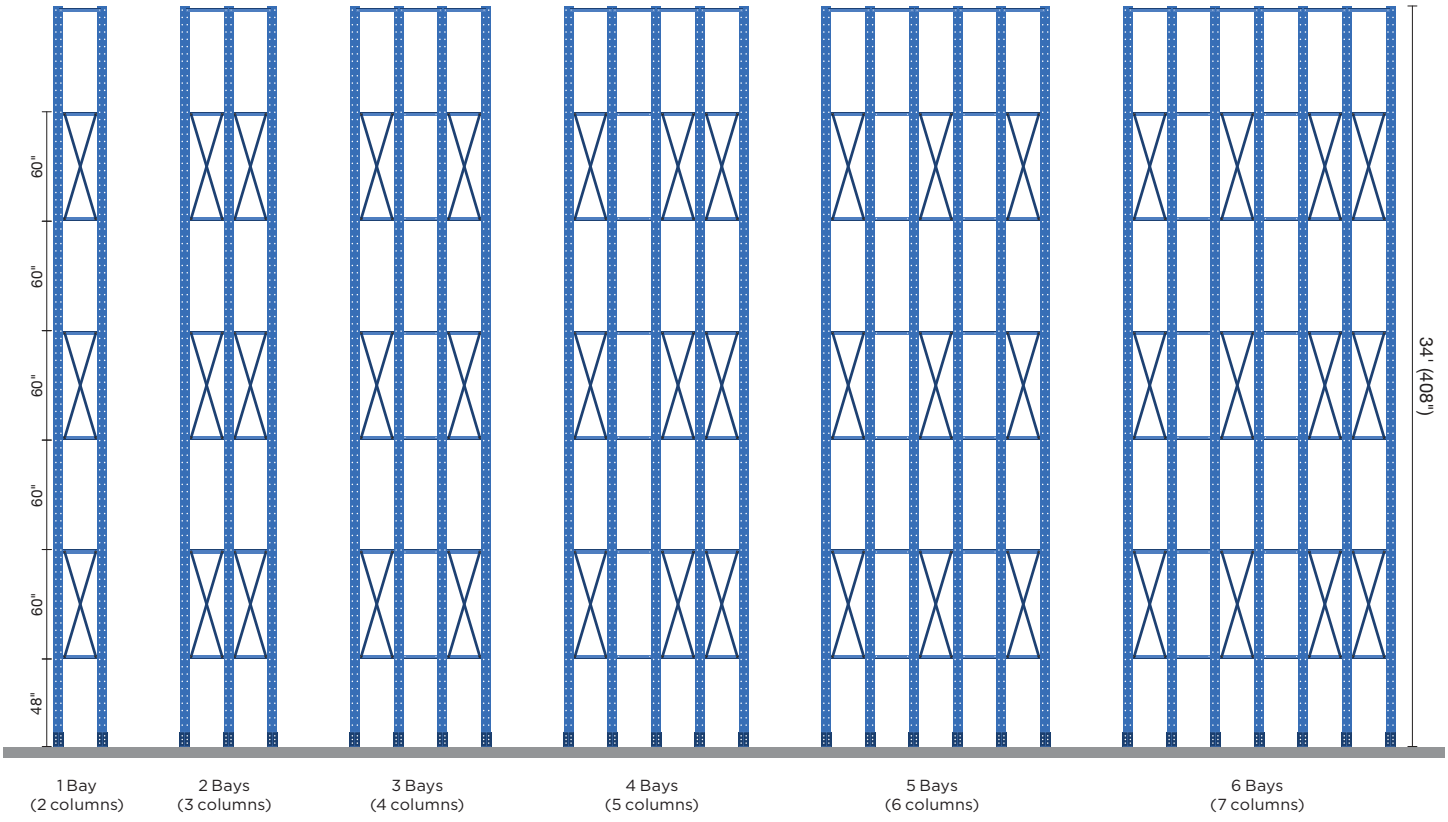


NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.

H23 BRACING SCHEMATICS

34′ (408″) COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.

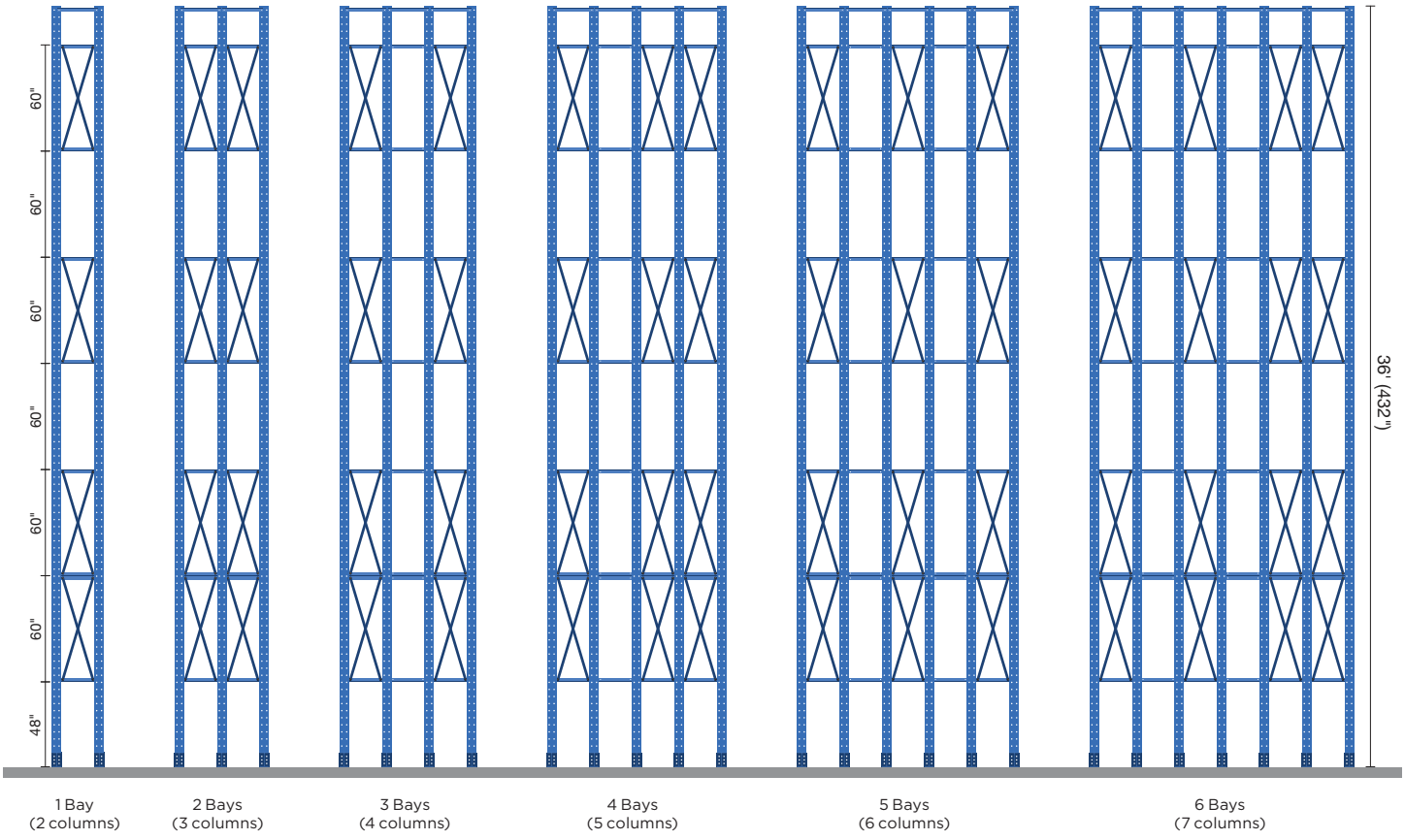


NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.

H23 BRACING SCHEMATICS

36' (432") COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.

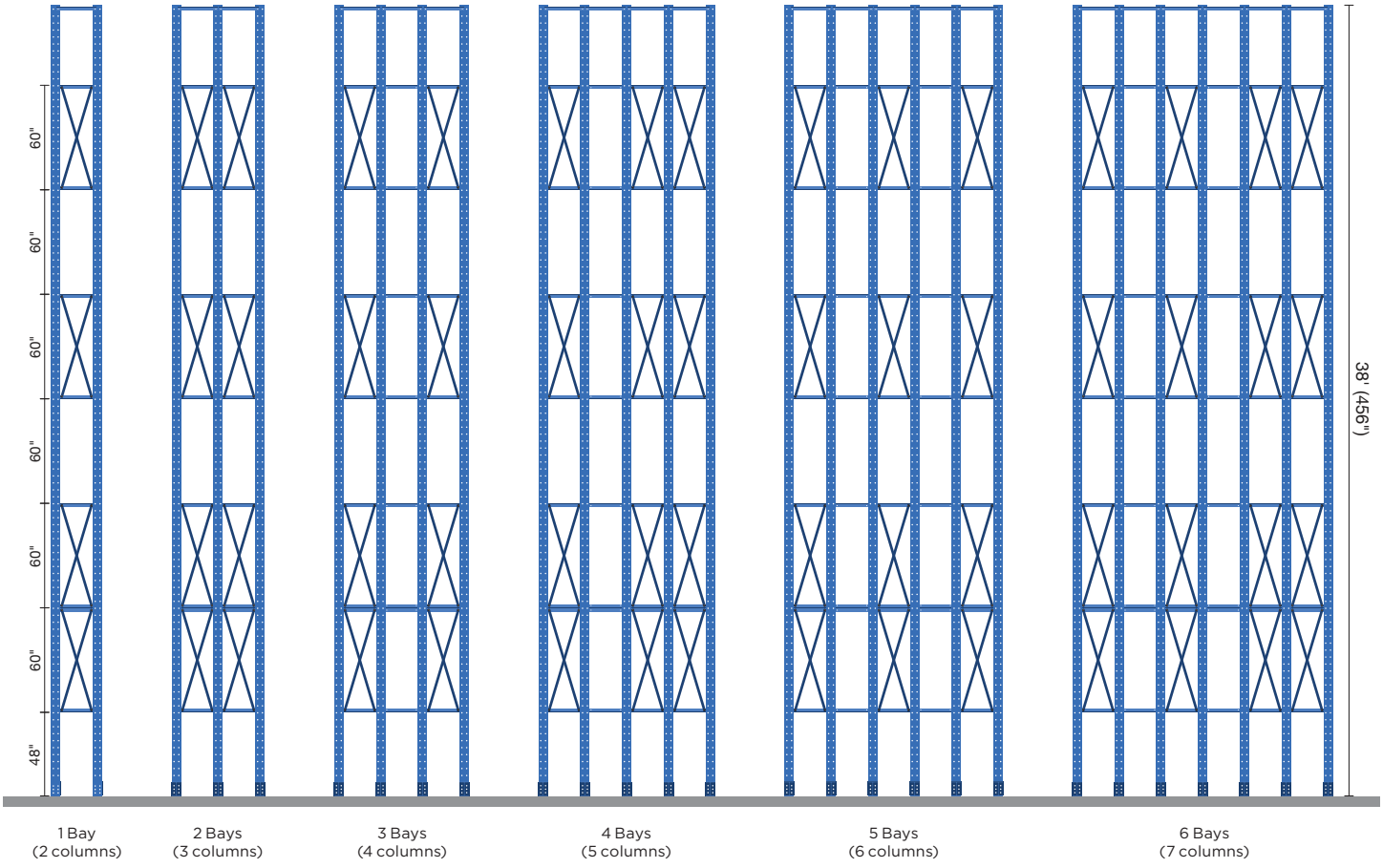


NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.

H23 BRACING SCHEMATICS

38' (456") COLUMNS

H23 cantilever rows will have alternating "X" braces starting from the first bay.
When the number of bays is even then there will be 2 bays with "X" bracing at the end of the row.



NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.

H23 CANTILEVER ARM CAPACITY

Arm Capacities - Uniformly Distributed Loads (lb)					
Arm	Arm Length (in)				
	24"	36"	48"	60"	72"
S3" X 5.7	3,320	2,210	1,640	1,310	1,080
S4" X 7.7	4,640	3,090	2,300	1,830	1,510
S5" X 10	7,000	4,610	3,480	2,770	2,280
S6" X 12.5	8,300	5,530	4,120	3,290	2,710

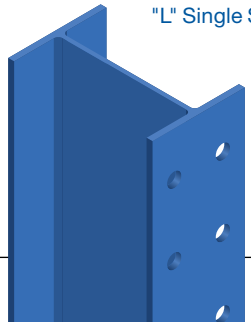
- Based on R.M.I. Cantilever specification.
- Capacities are based on uniformly distributed loads on arms and the loads' depth **should never exceed** the arms' length.
- Applicable for **non-seismic** use only.
- Effect on impact loads has been taken into account for the static analysis.
- Values shown reflect the capacity of the arms based on the lesser of its strength bending, deflection criteria or arm to column connection capacity.
- The weight of the arms is included.
- Capacities are only valid when used with Interlake Mecalux components.

H23 SINGLE SIDED LATERAL COLUMN CAPACITY

Single Sided Lateral Column Capacity (lb)													
Column Model	Column Height	Arm Length (in)					Column Model	Column Height	Arm Length (in)				
		24"	36"	48"	60"	72"			24"	36"	48"	60"	72"
W8" X 18	8'	12,200	9,000	7,200	5,900	5,100	W8" X 24	8'	12,500	9,200	7,300	6,000	5,100
	10'	12,200	9,000	7,200	5,900	5,100		10'	12,500	9,200	7,300	6,000	5,100
	12'	12,200	9,000	7,200	5,900	5,100		12'	12,500	9,200	7,300	6,000	5,100
	14'	12,200	9,000	7,200	5,900	5,100		14'	12,500	9,200	7,300	6,000	5,100
	16'	12,200	9,000	7,200	5,900	5,100		16'	12,500	9,200	7,300	6,000	5,100
	18'	12,150	8,975	7,175	5,900	5,100		18'	12,400	9,175	7,275	6,000	5,100
	20'	12,100	8,950	7,150	5,900	5,100		20'	12,300	9,150	7,250	6,000	5,100
	22'	12,050	8,925	7,125	5,900	5,100		22'	12,200	9,125	7,225	6,000	5,100
	24'	12,000	8,900	7,100	5,900	5,100		24'	12,100	9,100	7,200	6,000	5,100
	26'	12,000	8,900	7,100	5,900	5,100		26'	12,100	9,100	7,200	6,000	5,100
	28'	12,000	8,900	7,100	5,900	5,100		28'	12,100	9,100	7,200	6,000	5,100
	30'	12,000	8,900	7,100	5,900	5,100		30'	12,100	9,100	7,200	6,000	5,100
	32'	12,000	8,900	7,100	5,900	5,100		32'	12,100	9,100	7,200	6,000	5,100
	34'	11,840	8,900	7,100	5,900	5,100		34'	12,067	9,100	7,200	6,000	5,080
	36'	11,680	8,900	7,100	5,900	5,100		36'	12,033	9,100	7,200	6,000	5,060
	38'	11,520	8,900	7,100	5,900	5,100		38'	12,000	9,100	7,200	6,000	5,040

NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.
Column-to-base connection capacity values are from test.

"L" Single Sided Columns

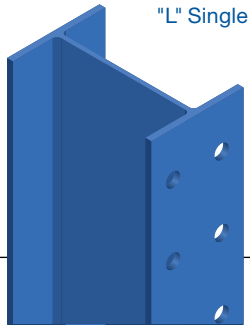


H23 SINGLE SIDED LATERAL COLUMN CAPACITY

Single Sided Lateral Column Capacity (lb)						
Column Model	Column Height	Arm Length (in)				
		24"	36"	48"	60"	72"
W10" X 26	8'	18,200	13,700	10,900	8,900	7,600
	10'	18,200	13,700	10,888	8,900	7,600
	12'	18,200	13,700	10,875	8,900	7,600
	14'	18,200	13,700	10,863	8,900	7,600
	16'	18,200	13,700	10,850	8,900	7,600
	18'	18,200	13,700	10,838	8,900	7,600
	20'	18,200	13,700	10,825	8,900	7,600
	22'	18,200	13,700	10,813	8,900	7,600
	24'	18,200	13,700	10,800	8,900	7,600
	26'	18,200	13,700	10,800	8,900	7,600
	28'	18,200	13,700	10,800	8,900	7,600
	30'	18,200	13,700	10,800	8,900	7,600
	32'	18,200	13,700	10,800	8,900	7,600
	34'	18,200	13,700	10,800	8,900	7,600
	36'	18,200	13,700	10,800	8,900	7,600
	38'	18,200	13,700	10,800	8,900	7,600
W12" X 30	8'	22,500	17,200	13,700	11,400	9,800
	10'	22,500	17,200	13,700	11,400	9,800
	12'	22,500	17,200	13,700	11,400	9,800
	14'	22,500	17,200	13,700	11,400	9,800
	16'	22,500	17,200	13,700	11,400	9,800
	18'	22,500	17,200	13,700	11,400	9,800
	20'	22,500	17,200	13,700	11,400	9,800
	22'	22,500	17,200	13,700	11,400	9,800
	24'	22,500	17,200	13,700	11,400	9,800
	26'	22,500	17,200	13,700	11,400	9,800
	28'	22,500	17,200	13,700	11,400	9,800
	30'	22,500	17,200	13,700	11,400	9,800
	32'	22,500	17,200	13,700	11,400	9,800
	34'	22,500	17,200	13,700	11,400	9,800
	36'	22,500	17,200	13,700	11,400	9,800
	38'	22,500	17,200	13,700	11,400	9,800

Column capacity charts assume even spacing between arm levels, if arm levels require different spacing consult with Interlake Mecalux Engineering.

"L" Single Sided Columns



H23 CANTILEVER ARM CAPACITY

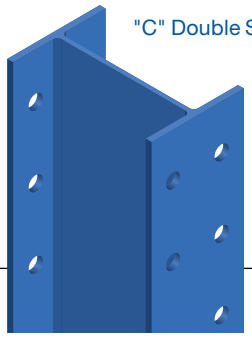
Arm Capacities - Uniformly Distributed Loads (lb)					
Arm	Arm Length (in)				
	24"	36"	48"	60"	72"
S3" X 5.7	3,320	2,210	1,640	1,310	1,080
S4" X 7.7	4,640	3,090	2,300	1,830	1,510
S5" X 10	7,000	4,610	3,480	2,770	2,280
S6" X 12.5	8,300	5,530	4,120	3,290	2,710

- Based on R.M.I. Cantilever specification.
- Capacities are based on uniformly distributed loads on arms and the loads' depth **should never exceed** the arms' length.
- Applicable for **non-seismic** use only.
- Effect on impact loads has been taken into account for the static analysis.
- Values shown reflect the capacity of the arms based on the lesser of its strength bending, deflection criteria or arm to column connection capacity.
- The weight of the arms is included.
- Capacities are only valid when used with Interlake Mecalux components.

H23 DOUBLE SIDED LATERAL COLUMN CAPACITY

Single Sided Lateral Column Capacity (lb)													
Column Model	Column Height	Arm Length (in)					Column Model	Column Height	Arm Length (in)				
		24"	36"	48"	60"	72"			24"	36"	48"	60"	72"
W8" X 18	8'	24,400	18,000	14,400	11,800	10,200	W8" X 24	8'	25,000	18,400	14,600	12,000	10,200
	10'	24,400	18,000	14,400	11,800	10,200		10'	25,000	18,400	14,600	12,000	10,200
	12'	24,400	18,000	14,400	11,800	10,200		12'	25,000	18,400	14,600	12,000	10,200
	14'	24,400	18,000	14,400	11,800	10,200		14'	25,000	18,400	14,600	12,000	10,200
	16'	24,400	18,000	14,400	11,800	10,200		16'	25,000	18,400	14,600	12,000	10,200
	18'	24,300	17,950	14,350	11,800	10,200		18'	24,800	18,350	14,550	12,000	10,200
	20'	24,200	17,900	14,300	11,800	10,200		20'	24,600	18,300	14,500	12,000	10,200
	22'	24,100	17,850	14,250	11,800	10,200		22'	24,400	18,250	14,450	12,000	10,200
	24'	24,000	17,800	14,200	11,800	10,200		24'	24,200	18,200	14,400	12,000	10,200
	26'	24,000	17,800	14,200	11,800	10,200		26'	24,200	18,200	14,400	12,000	10,200
	28'	24,000	17,800	14,200	11,800	10,200		28'	24,200	18,200	14,400	12,000	10,200
	30'	24,000	17,800	14,200	11,800	10,200		30'	24,200	18,200	14,400	12,000	10,200
	32'	24,000	17,800	14,200	11,800	10,200		32'	24,200	18,200	14,400	12,000	10,200
	34'	23,680	17,800	14,200	11,800	10,200		34'	24,134	18,200	14,400	12,000	10,160
	36'	23,360	17,800	14,200	11,800	10,200		36'	24,066	18,200	14,400	12,000	10,120
	38'	23,040	17,800	14,200	11,800	10,200		38'	24,000	18,200	14,400	12,000	10,080

NOTE:
For W8" X 18 and W8" X 24 columns, 32' and higher needs double bracing in both directions.
To define this type of solution, contact Interlake Mecalux Engineering.
Column-to-base connection capacity values are from test.



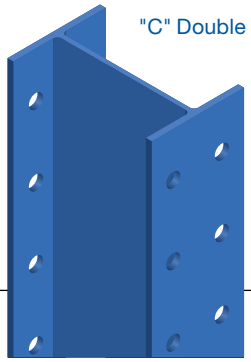
"C" Double Sided Columns

H23 DOUBLE SIDED LATERAL COLUMN CAPACITY

Single Sided Lateral Column Capacity (lb)						
Column Model	Column Height	Arm Length (in)				
		24"	36"	48"	60"	72"
W10" X 26	8'	36,400	27,400	21,800	17,800	15,200
	10'	36,400	27,400	21,776	17,800	15,200
	12'	36,400	27,400	21,750	17,800	15,200
	14'	36,400	27,400	21,726	17,800	15,200
	16'	36,400	27,400	21,700	17,800	15,200
	18'	36,400	27,400	21,676	17,800	15,200
	20'	36,400	27,400	21,650	17,800	15,200
	22'	36,400	27,400	21,626	17,800	15,200
	24'	36,400	27,400	21,600	17,800	15,200
	26'	36,400	27,400	21,600	17,800	15,200
	28'	36,400	27,400	21,600	17,800	15,200
	30'	36,400	27,400	21,600	17,800	15,200
	32'	36,400	27,400	21,600	17,800	15,200
	34'	36,400	27,400	21,600	17,800	15,200
	36'	36,400	27,400	21,600	17,800	15,200
	38'	36,400	27,400	21,600	17,800	15,200
W12" X 30	8'	45,000	34,400	27,400	22,800	19,600
	10'	45,000	34,400	27,400	22,800	19,600
	12'	45,000	34,400	27,400	22,800	19,600
	14'	45,000	34,400	27,400	22,800	19,600
	16'	45,000	34,400	27,400	22,800	19,600
	18'	45,000	34,400	27,400	22,800	19,600
	20'	45,000	34,400	27,400	22,800	19,600
	22'	45,000	34,400	27,400	22,800	19,600
	24'	45,000	34,400	27,400	22,800	19,600
	26'	45,000	34,400	27,400	22,800	19,600
	28'	45,000	34,400	27,400	22,800	19,600
	30'	45,000	34,400	27,400	22,800	19,600
	32'	45,000	34,400	27,400	22,800	19,600
	34'	45,000	34,400	27,400	22,800	19,600
	36'	45,000	34,400	27,400	22,800	19,600
	38'	45,000	34,400	27,400	22,800	19,600

Column capacity charts assume even spacing between arm levels, if arm levels require different spacing consult with Interlake Mecalux Engineering.

"C" Double Sided Columns



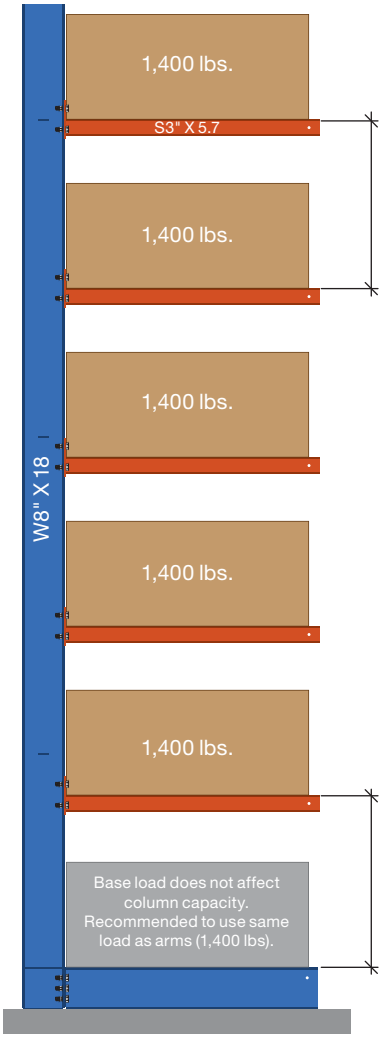
H23 SINGLE SIDED V DOUBLE SIDED CAPACITY EXAMPLE

Request: Load per arm is 1,400 lbs, arm length is 48", column will have 6 levels (5 arms + base) evenly spaced, column height is 16' (192").
48" Arm S3" X 5.7 has a max. capacity of 1,640 lbs.
Single Sided: 5 arms x 1,400 = 7,000 lbs / W8" X 18 has a max. capacity of 7,200 lbs when Single Sided.
Double Sided: 10 arms X 1,400 = 14,000 lbs / W8" X 18 has a max. capacity of 14,400 when Double Sided.

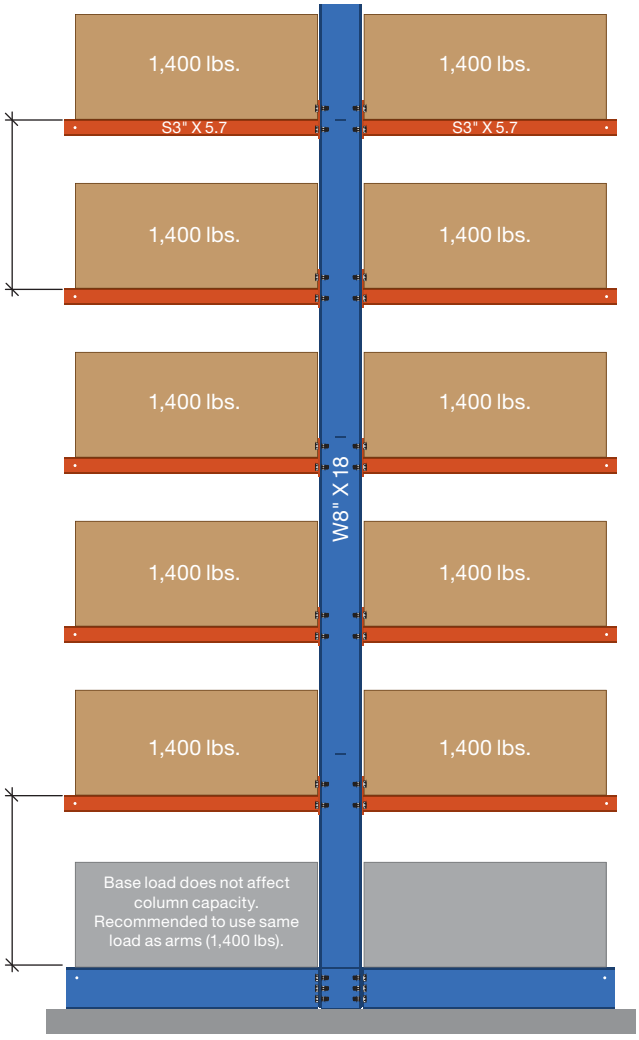
Arm Model	Length
	48"
S3" X 5.7	1,640
S4" X 7.7	2,300
S5" X 10	3,480
S6" X 12.5	4,120

Column Model	Column Height	Single Sided	Double Sided
		Arm Length	Arm Length
		48"	48"
W8" X 18	16' (192")	7,200	14,400
W8" X 24		7,300	14,600
W10" X 26		10,850	21,700
W12" X 30		13,700	27,400

SINGLE SIDED "L" COLUMN
PROFILE VIEW



DOUBLE SIDED "C" COLUMN
PROFILE VIEW



Interlake MECALUX

Tel. 1-877-632-2589 - info@interlakemecalux.com - interlakemecalux.com

SALES OFFICES

CHICAGO
1600 North 25th Ave.
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Denton TX 76207

SAN DIEGO
8607 Ave. De La Fuente
San Diego, CA 92154

PRODUCTION PLANTS

CHICAGO
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Melrose Park, IL 60160

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Industrial del Norte
Matamoros Tamaulipas,
C.P. 87316

PONTIAC
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Pontiac, IL 61764

TIJUANA
Blvd. Bellas Artes, 9001
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