



CAPACITY & UNBALANCED LOAD INFORMATION FOR HEAVY DUTY (HD) SHELVING SYSTEM

01-199

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Capacity & Unbalanced Load Information for Heavy Duty (HD) Shelving System

The Heavy Duty (HD) shelving system has more unbalanced load capacity than the standard shelving system (L-Line standard Gondola).

Follow the procedure shown on page 2 for calculating the unbalanced load on Heavy Duty wall or island shelving.

IMPORTANT!

See *L-Line Basic Gondola Installation Instructions* (01-13P) for Base Bracket and Upright assembly procedures.

Shelving System	Unbalanced Load Capacity
Heavy Duty 06 Base	20,000 inch-pounds
Heavy Duty Low Base	18,000 inch-pounds
L-Line standard Gondola	12,000 inch-pounds

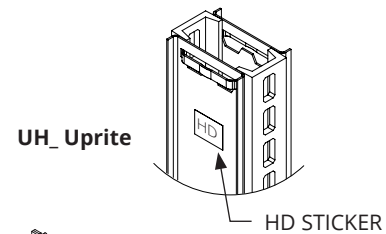
WARNING:

These Heavy Duty capacities are only available when Heavy Duty Uprights and Base Brackets are used together. DO NOT mix Heavy Duty and standard Components.

HEAVY DUTY (HD) SYSTEM COMPONENTS

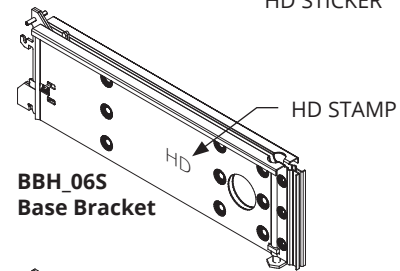
UH_ Universal Heavy Duty Upright

The Universal Heavy Duty Upright (UH_) will accept either an 06 Base Bracket or a Low Base Bracket. An "HD" sticker on the side of the upright indicates Heavy Duty capacity. Sticker may be at top or bottom of upright.



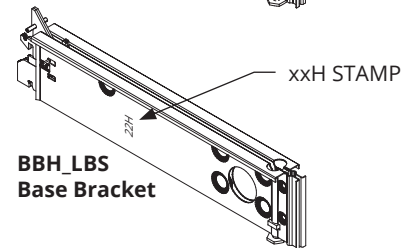
BBH_06S Heavy Duty 06 Base Bracket (16"D - 25"D)

"HD" is stamped in the side to indicate Heavy Duty capacity.



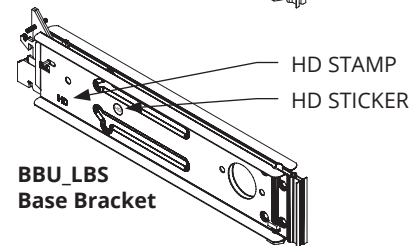
BBH_LBS Heavy Duty Low Base Bracket (16"D - 31"D)

"xxH" is stamped in the side to indicate Heavy Duty capacity (xx represents placeholder for bracket size). Sizes 16"D through 25"D of this item were obsoleted and replaced with BBU_LBS in July 2023.



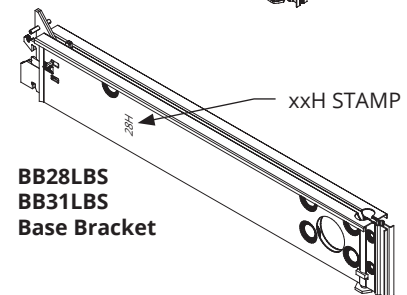
BBU_LBS Universal Low Base Bracket (13"D - 25"D)

The Universal Low Base Bracket was introduced in July 2023, replacing Heavy Duty Low Base Brackets (BBH_LBS) and standard Low Base Brackets (BB_LBS) sizes 13"D to 25"D. "HD" is stamped in the side to indicate Heavy Duty capacity. An "HD" sticker may also be present on the side.



BB_LBS Low Base Bracket (28"D & 31"D only)

28"D & 31"D sizes of this Base Bracket are rated for Heavy Duty capacity and may be specified when HD depths greater than 25"D are required. "xxH" is stamped in the side to indicate Heavy Duty capacity (xx represents placeholder for bracket size).



Unbalanced Load Calculations for Heavy Duty (HD) Shelving

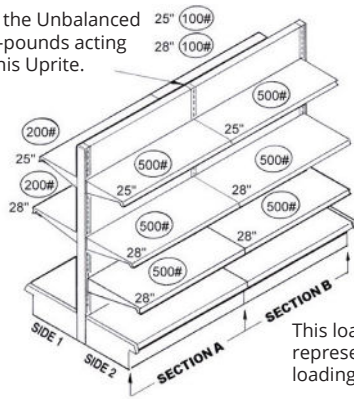
CALCULATE UNBALANCED LOAD OF AN ISLAND SECTION:

When heavily loading wall shelving or loading or unloading island shelving, it is important to determine if you are creating an unbalanced load that exceeds the maximum allowable. The sample calculation below illustrates how you can determine your unbalanced load in inch-pounds acting on an upright within an island section of shelving.

NOTE:

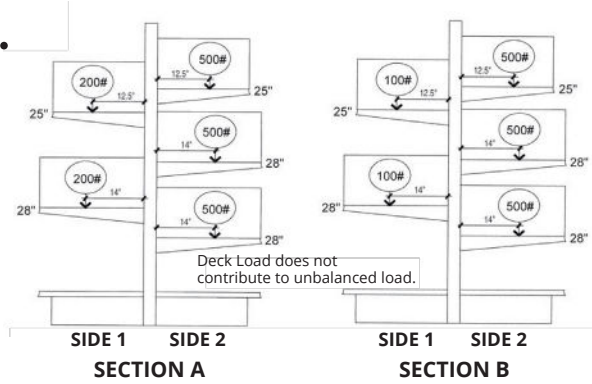
Shelf load is measured in inch-pounds and calculated at a distance (1/2 shelf depth) from the Upright. Shelf depth is divided by 2 because an evenly distributed shelf load is calculated as a total load at center of shelf depth. Shelf load is divided by 2 because a shelf load is supported by two uprights.

1. Find the Unbalanced inch-pounds acting on this Upright.



This loading situation may be represented by two separate loading diagrams as shown.

- 2.



- 3.

	(Shelf depth ÷ 2)	x	(Shelf load ÷ 2)	=	SIDE 1	SIDE 2
SECTION A	12.5"	x	100#	=	1250" #	
	14"	x	100#	=	1400" #	
	12.5"	x	250#	=		3125" #
	14"	x	250#	=		3500" #
SECTION B	12.5"	x	50#	=	625" #	
	14"	x	50#	=	700" #	
	12.5"	x	250#	=		3125" #
	14"	x	250#	=		3500" #
TOTAL (Section A and B)					3975" #	20250" #

"# indicates inch-pounds

Sum of Side 2 loads: 20,250 inch-pounds
Sum of Side 1 loads: - 3,975 inch-pounds

Subtract the smaller load from the larger: = **16,275** inch-pounds

This difference is the **TOTAL UNBALANCED LOAD** acting on the upright and **MUST NEVER EXCEED 18,000 INCH-POUND LIMIT OF HEAVY DUTY LOW BASE SYSTEMS OR 20,000 INCH-POUND LIMIT OF HEAVY DUTY 06 BASE SYSTEMS.**

CAUTION:

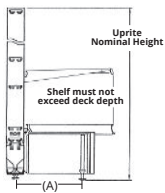
In this example, 16,275 inch-pounds does not exceed either the 18,000 inch-pound limit for HD Low Base or the 20,000 inch-pound limit for HD 06 Base. However, note that the total of Sections A and B on Side 2 is 20,250 inch-pounds. This means that Side 2 would exceed the limits for Heavy Duty Low Base and 06 systems if loaded before Side 1, or if Side 1 was unloaded before Side 2. Therefore, on this example, Side 1 should be loaded before Side 2, and Side 2 should be unloaded to less than 18,000 inch-pounds for HD Low Base and 20,000 inch-pounds for HD 06 Base before unloading Side 1.

CALCULATE UNBALANCED LOAD OF A WALL SECTION:

The method used to determine the unbalanced inch-pounds on a wall section is the same as the method shown for an island section. Simply consider the side without shelves having a load of zero.

Special Warnings

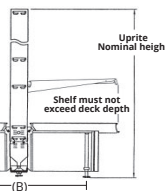
WALL SECTION



WALL		
BASE SIZE	LEVELER SPACING (A)	TALLEST UNANCHORED UPRITE
13"	9 3/4"	54"
16"	12 3/4"	72"
19"	15 3/4"	90"
22"	18 3/4"	108"
25"	21 3/4"	120"
28"	24 3/4"	144"

NOTE: For Upright applications taller than 144" contact Marketing.

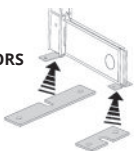
ISLAND SECTION



ISLAND		
BASE SIZE	LEVELER SPACING (B)	TALLEST UNANCHORED UPRITE
13"/13"	19 1/2"	114"
13"/16"	22 1/2"	132"
13"/19"	25 1/2"	144"
16"/16"	25 1/2"	144"

NOTE: For Upright applications taller than 144" contact Marketing.

FLOOR ANCHORS



TO HELP AVOID OVERTURNING:

- The height of the Upright (including Extension Uprights, if any) must not exceed the leveler spacing by a ratio of 6:1 when unanchored (see the charts). **CAUTION:** Tall unanchored Island Sections using 13"-16" bases and heavily loaded on one side must not exceed the following load limits:
 - 13" base with Upright height greater than 78", unbalanced load not to exceed 6,500 in-lbs
 - 16" base with Upright height greater than 102", unbalanced load not to exceed 8,000 in-lbs
- If Uprights on Wall Sections exceed the heights listed, the Base Bracket and the Upright Levelers must be anchored to the floor or otherwise braced.
- Base Brackets of free-standing Wall Sections must be anchored to prevent backward tipping. If upright height to leveler spacing exceeds 6:1 the Base Brackets and Uprights must be anchored.
- Contact local building official for anchoring requirements in seismic zones.
- Maximum shelf depth **cannot** exceed Base Deck depth.
- Do not** hang Peg Hooks, Shelves, or other accessories on the back side of a Wall Section or any section without Base Brackets. Wall Sections do not have Base Brackets on the back side to provide support, and use of the back side to display merchandise may cause the section to tip over.
- Do not** lean tall or heavy items against shelving unless shelving is anchored to a suitable building wall, to the floor, or otherwise braced to prevent overturning. The weight and force of leaning items on unanchored or unbraced shelving may cause the shelving to overturn or collapse.
- Extension Uprights: The maximum unbalanced load on shelves above the joint on an Extension Upright should not exceed 2500 inch-pounds. Exceeding this maximum load may cause shelving to tip over resulting in personal injury or property damage.
- Pegboard Back loads: The loads applied to Pegboard Backs should not exceed 150 lbs. on one side of a section with a standard Bottom Rail (150 lbs. per side for Double Backs) and 300 lbs. on one side (300 lbs. per side on Double Backs) with a heavy duty Bottom Rail.
- If free-standing fixture is on carpet, reduce maximum height by 12".