

**Wilsonstak®**



Wilsonstak

**BOOKSTACK PLANNING  
AND LAYOUT GUIDE**

# Library Bookstack Planning

Library bookstacks are shelving units specifically designed for efficient storage and display of library collections. With today's multimedia collections available, proper planning, layout and selection of bookstacks and component accessories, is a very important aspect of today's library design.

## Standard Bookstack Sizes

The shelf sizes and number of Bookstack Units selected will depend on the type of books being shelved. The following table indicates the recommended shelf depth and average number of volumes which can be stored per linear foot of shelf for various types of books and media.

**Please note:** This chart represents the maximum capacity of a shelf and not necessarily the typical working capacity. Working capacity will be between 2/3 and 3/4 of the maximum capacities shown, depending on the wishes of the librarian.

Types of Volumes	Number of Volumes Per Linear Foot of Shelf	Recommended Depth of Shelf	Volumes Per Sq. Ft. of Bookstack Area*
Circulation (non-fiction)	8	8"	19
Fiction	8	8"	19
General Literature	7	8"	18
Economics	8	8"	19
Reference	6	8"/10"	17
History	7	8"	18
Technical & Scientific	6	8"/10"/12"	15
Law	5	8"	11
Medical	5	8"/10"	11
Bound Periodicals	5	10"/12"	11
Art (Quartos & Folios)	7	10"/12"	15
Juvenile (octavos)	10	8"	20
Juvenile (folios)	12	10"/12"	17
Public Documents	5	8"	12
Microfilm	7	4"/6"	Varies on shelf type
VHS Tapes	9	6"/8"	Varies on shelf type
CD-Roms	27	6"/8"	Varies on shelf type
DVD's	18	6"/8"	Varies on shelf type

\*Based on storage in 90" high Bookstack Units.  
 As a guide, an average library will require about 80% - 85% of its total shelving as 8" deep; 10%-15% in 10" depth; and 2% -5% in 12" depth.

## Standard Bookstack Sizes

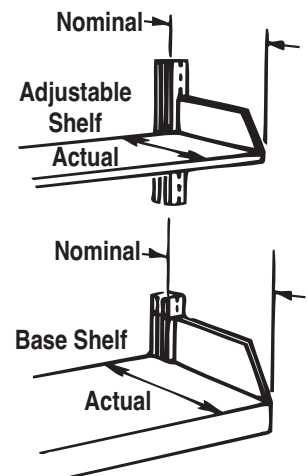
- Widths:** 24", 30" or 36"
- Heights:** 42", 54", 66", 78", 90" or 93"
- Depths:**
  - \*\*Single-faced: 8", 9", 10" or 12"
  - \*\*Double-faced: 16", 18", 20" or 24"
 Special sizes can be made to order.

### \*\* Nominal vs. Actual Dimensions

For Cantilever type bookstacks, the adjustable shelves and base shelf depths are given in "nominal" dimensions, which indicates the depth from the front edge of the shelf to the center line of the 2" depth frame.

For adjustable shelves, the actual depth is 1" less than the "nominal" depth.

For base shelves, the actual depth of the shelf, as well as the overall depth of the bookstack unit, will measure 1-3/8" greater than the nominal depth for single face units and 7/16" greater than the nominal depth for double faced units. eg. 24" base shelf is actually 24-7/16" deep.



# Shelf Spacing Guide

The following chart shows maximum quantity of adjustable shelves, and proper shelf spacing for different type shelves, based on different height frames.

## Closed Base Bookstack

Maximum Adjustable Shelves per Frame Face

Shelf Type	Minimum Spacing Required Between Shelves	Number of Shelves without Canopy Top							Number of Shelves with Canopy Top						
		42"	54"	66"	78"	84"	90"	93"	42"	54"	66"	78"	84"	90"	93"
Standard Adjustable or Divider Type Shelf	8"	4	5	7	8	9	10	10	3	5	6	8	8	9	10
Storage Shelf 12" or 15" with Reverse Bracket	4"	8	11	14	17	18	20	20	7	10	13	16	17	19	20
18" Heavy Duty w/Top Bracket	5"	6	8	11	13	14	16	16	5	8	10	13	14	15	16
Fixed Periodical Shelf only	9"	3	4	6	7	8	8	9	3	4	5	7	7	8	8
Alternating Fixed Periodical and 12" Storage (allows 2" above storage shelf)		2-1	3-2	4-3	4-3	4-3	5-4	5-4	2-1	2-1	3-2	4-3	4-3	5-4	5-4
Hinged Periodical 12" or 16" deep	14"	2	3	4	5	5	6	6	2	3	4	5	5	5	6
Sloping Media ZigZag (MZIGZAG) Media Shelf Single (MSAVS)	9"	3	4	6	7	8	8	9	3	4	5	7	7	8	8
Microfilm Shelf	5"	6	8	11	13	14	16	16	5	8	10	13	14	15	16
Phono, Record & Picture Book Shelf	14"	2	2	3	4	4	5	5	2	2	3	4	5	5	5
Media Shelf Double Tier (MCSDST)	13"	2	3	4	4	5	5	5	2	3	3	4	5	5	5
Browsing Box	12"	2	3	4	5	6	6	6	2	3	4	5	5	6	6
Media Hanger Rack	20"	2	2	3	3	4	4	4	2	2	3	3	4	4	4
Newspaper Rack 6	29"	1	1	2	2	2	3	3	1	1	2	2	2	3	3
Newspaper Rack 10	37"	1	1	1/1	2	2	2	2	1	1	1/1	2	2	2	2
Universal Media/Display Shelf															
Flat Position	8"	4	5	7	8	9	10	10	3	5	6	8	8	9	10
Sloped Position	10"	2	4	5	6	6	7	8	2	3	4	6	6	7	7

# Book Capacity Planning Guide

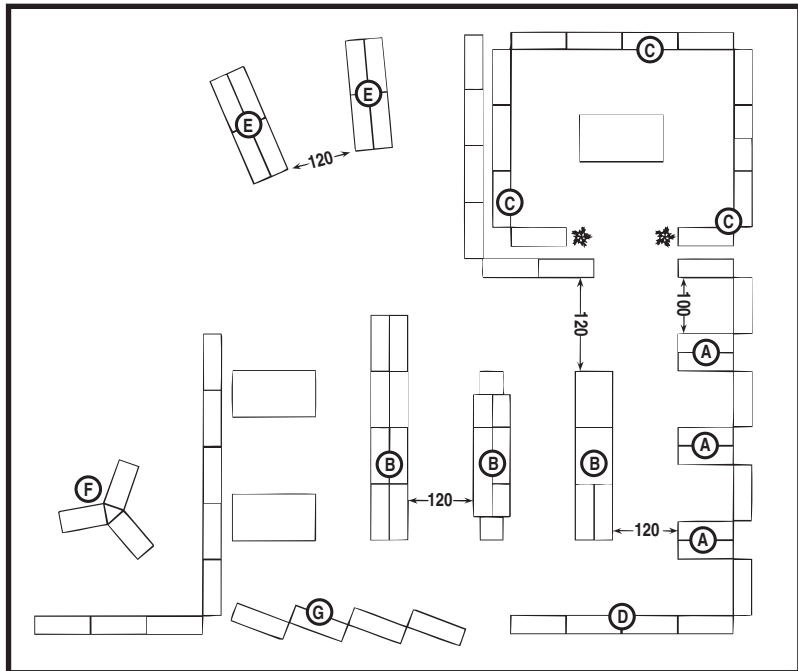
The chart to the right shows approximate capacity of books, based on eight (8) volumes per shelf foot. This assumes shelving width is standard 36" wide and seven (7) shelves high (the 90" high most popular unit).

Range Length	Book Capacity Single Face	Book Capacity Double Face
3'	168	336
6'	336	672
9'	504	1,008
12'	672	1,344
15'	840	1,680
18'	1,008	2,016
21'	1,176	2,352
24'	1,344	2,688
27'	1,512	3,024
30'	1,680	3,360

# Space Planning and Layout Guide

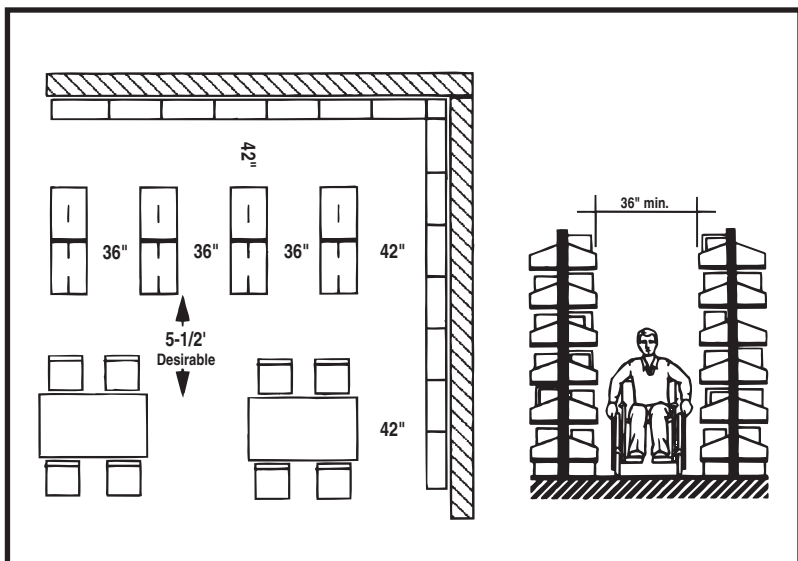
Popular bookstack layouts are:

- A. Comb-like
- B. Block Range
- C. Perimeter
- D. In Line
- E. Fan
- F. Cluster
- G. Diagonally Stepped



Library bookstacks are normally installed in ranges consisting of one or more three foot sections in a continuous row.

Recommended row aisle spacing is illustrated to the right as a guide in preliminary planning.



# Range Spacing Data

How far apart each range of shelving is to each other, depends on how wide the desired aisle width is. Keeping with ADA accessibility guidelines, requires an aisle width of a clear 36". The center line (the distance from the center of one range to another) will depend on how wide the base shelf dimension is. The following chart displays the various double face base shelf dimensions and the center line distance between frames required to maintain a 36" clear aisle. Keep in mind the base shelf dimensions shown are nominal. The spacing shown takes into consideration the actual dimension of the base in order to calculate center line measurements.

Nominal Base Shelf Dimension	Center Lines from one Double Face Range to the Next
16"	52-1/2"
18"	54-1/2"
20"	56-1/2"
24"	60-1/2"
32"	68-1/2"

## General Guidelines

All facilities and the use of the facility are different. Space planning a childrens' area versus space planning a medical reference library are obviously quite different. However, general guidelines and issues of space planning are usually the same.

The following space planning issues may help you when either doing your own space planning or analyzing the work of others.

**Traffic Flow** - Consider traffic flow from main aisles, area to area, as well as within specific areas. Always allow room for wheel chair access and follow ADA requirements such as 36" clear space between stacks or 42" clear space around perimeter.

**Lighting** - A reflected ceiling plan is as important to the space as where you position the furnishings. Take into consideration natural light sources, seasonal changes as well as where the overhead or indirect ambient light sources are positioned in relation to the stacks. Lights down the center of aisles are ideal.

**Sound** - Libraries should be quiet places, but some areas are noisier than others. Take into consideration where people tend to congregate such as near an information desk, and keep the study areas away from them.

**Ceiling Height** - Be aware of local codes so enough clearance is allowed from the top of stacks to lowest point of a ceiling such as the bottom of a light fixture, or sprinkler head.

**Switches and Thermostats** - Be sure to leave enough access to get to light switches and thermostat controls.

**Air Circulation** - Air flow can be affected by the proximity of the bookstacks in relationship to air vents. Plan accordingly to avoid "hot spots" and "cold spots" in the room.

**Hire a Professional Space Planner** - To get an expert job in planning your facility, Borroughs network of professional library planners are available to assist you with professional experienced layout work. Call the "Wilsonstak Desk" at Borroughs at 1-800-748-0227, and ask for the Wilsonstak Representative nearest you to help you with your floor plan.

# Free Standing and Non-Free Standing Bookstacks

The relationship between upper adjustable shelves and the bottom base shelf, can determine whether a bookstack unit can be considered free standing or needs to be secured to either a wall, the floor, or when additional stabilization is required.

Double faced bookstack units with 8" or 9" adjustable shelves over a 20" base shelf, as well as 10" or 12" adjustable shelves over a 24" base shelf are considered free standing units.

All double faced units that have adjustable shelves and base shelves with the same "nominal depth", and all single faced units are considered non-free standing. Double-face non-free standing units must be floor anchored or stabilized with top tie struts. All single faced units must be secured to the wall.

## Floor Loading

To estimate floor loading, the weight of a single tier bookstack filled with books to typical working capacity, may be figured at 35 lbs. per cubic foot of range. Normally, the floor load for bookstacks and books can be safely figured at 150 lbs. per square foot. Bookstack on compact mobile shelving systems will run 200-250 lbs. per square foot. Additional allowances for live loads may be required, depending on local building codes.

## Sizing Custom Wood/Laminate End Panels; Corners Fillers and Intermediate Fillers

When sizing custom end panels, or corner and intermediate fillers, consideration for actual base shelf or periodical shelf dimensions must be understood so correct sizes can be ordered. The following guide will help you calculate correct sizes for these items:

### Standard Units

**Single Face:** Add 1-1/2" to nominal depth of base shelf.  
(eg: Base shelf = 12" nominal depth therefore end panels or fillers should be 13-1/2")

**Double Face:** Add 1" to nominal depth of base shelf.  
(eg: Base shelf = 24" nominal depth therefore end panels or fillers should be 25")

### Hinged Periodical Units

**Single Face:** Add 3" to nominal unit depth of 12", to allow end panel to cover hinged portion of shelf.  
(eg: Base shelf = 12" nominal depth therefore end panels or fillers should be 15")

**Double Face:** Add 4" to nominal unit depth of 24", to allow end panel to cover hinged portion of shelf.  
(eg: Base shelf = 24" nominal depth therefore end panels or fillers should be 28")

\*NOTE: End panel height can be same as frame height; however consideration for custom wood or laminate tops, and their relation to end panels can affect end panel height requirements - see Special Note below.

## Calculating Range Length and Sizing Wood/Laminate Canopy Tops

Accurate calculation of range length should add 1/16" growth for each section of shelving in a range; **eg:** If 8 - 3' sections make up a range, range length would equal 24'-1/2". A single stand alone unit does not require the 1/16" growth factor.

When specifying custom wood or laminate tops, a 1/16" growth factor should be calculated for each section of shelving that makes up a range. For Example, if there are (3) 36" sections of shelving in a range, the tops should be made 108-3/16" (9'-3/16") long.

**\*Special Note:** It must be decided if the top is being placed over the end panel or butting up to the end panel. For example, if the end panel is 1-1/4" thick, then the top must be made that much longer than the shelving units if the top is to go over the thickness of the end panel.

# Bookstack Installation Times

The following guide is based on number of man-minutes required to install various shelving units and accessories. Refer to the WILSONSTAK REFERENCE CATALOG to correlate catalog numbers with actual components and shelving packages. Add up all applicable units and time required to install, to get an approximate total man hours required to do an installation of cantilever library shelving. This chart will also assist in planning time required to move existing product from one location to another.

Catalog Number	Total Minutes	Catalog Number	Total Minutes	Catalog Number	Total Minutes	Catalog Number	Total Minutes
M684	12.0	MD6106	21.0	MWF64	9.0	MBBS6	4/min.
M694	12.0	MD6146	23.0	MWF65	9.0	MS612	3.0
M6104	12.5	MD6246	33.0	MWF66	9.0	MHS6	0.25
M6124	13.0	MD6107	24.0	MWF67	10.0	MPS6	5/min.
M6164	13.0	MD6147	26.0	MWF69	10.0	MIBD7 or MIBD9	0.15
M6184	13.0	MD6207	36.0	MWF693	10.0	MW-9	0.15
M6204	14.0	MD6287	38.0			MW-12	6/min.
M6244	15.0	MD6109	26.0	Base shelves or T-Bar		MSAVS-636	2.0
M685	13.0	MD6149	28.0	ncluded in frame price.			
M0695	13.0	MD6209	40.0			MWS624****	3.0
M6105	13.5	MD6289	42.0	M68 or M68IB	1.0	MSRS612	6.0
M6125	14.0	MD61093	26.0	M69 or M69IB	1.125	MFSE	0.5
M6165	15.0	MD61493	28.0	M610 or M610IB	1.25	MFSF	1.0
M6185	15.0	MD62093	40.0	M612 or M612IB	1.5	MDFD	1.5
M6205	16.0	MD62893	42.0	MD610	2.0	MCP9	5.0
M6245	17.0			MD612	2.25	MUFC9	1.0
M686	14.0			MD614	2.25	MNR6	3.0
M696	14.0	MHP64	21.0			MNR10	3.0
M6106	14.5	MHP66	33.0	Shelf Divider	.20	MSTACARL	8.0
M6126	15.0	MHP67	40.0				
M6166	17.0	MHP69	46.0	MFP612	3.0	MSC4	6.0
M6186	17.0	MHP64DF	33.0	MHP614**	6.0	MSC5	8.0
M6206	18.0	MHP66DF	57.0	MXCB8***	N/A	MSC6	10.0
M6246	19.0	MHP67DF	70.0	MWCB8*	0.5	MSC7	12.0
M687	16.0	MHP69DF	82.0	MTTS96	8.0	MSC8	14.0
M697	16.0	MFP64	18.0	SF C.T.****	3.0	MSC9	14.0
M6107	16.5	MFP66	24.0	DF C.T.****	6.0		
M6127	17.0	MFP67	31.0			MCH35	3.0
M6167	20.0	MFP69	37.0	End Panels****		MRF35	3.0
M6187	20.0	MFP64DF	27.0	42", 54" & 66"	5.0	MLH55	5/min.
M6207	21.0	MFP66DF	39.0	78", 90" & 93"	6.0	MLH75C	6/min.
M6247	22.0	MFP67DF	52.0				
M689	17.0	MFP69DF	65.0	MB64	5.0	Corner Filler	12.0
M699	17.0			MB65	5.0	Inter. Filler	18.0
M6109	17.5			MB66	5.0	Storage Locker	3.0
M6129	18.0			MB67	6.0	MMF64	1.5
M6169	22.0			MB69	6.0		
M6189	22.0			MB693	6.0	2-1/2 holes per frame	
M6209	23.0					Wall Anchor	2.0/hole
M6249	24.0					Floor Anchor	2.0/hole
M6892	17.0					Ceiling Anchor	3.0/hole
M6992	17.0						
M61092	17.5						
M61692	26.0						
M61892	26.0						
M62092	26.0						

Unloading on same floor 3,500 lbs./hour  
 Up or down one floor 2,500 lbs./hour  
 Multilevel with elevator 2,000 lbs./hour  
 Multilevel without elevator 1,000 lbs./hour

200 units As listed  
 150 - 200 units Add 10%  
 100 - 150 units Add 20%  
 50 - 100 units Add 30%  
 Less than 50 units Add 40%  
 Minimum 8 hours

\* For Wood Canopy Tops  
 \*\* Includes M612  
 \*\*\* Included in Steel Canopy Top  
 \*\*\*\* Steel or Wood

# Planning Sheet

SCALE: 1/4" = 1 Foot (each square represents 1 foot)



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