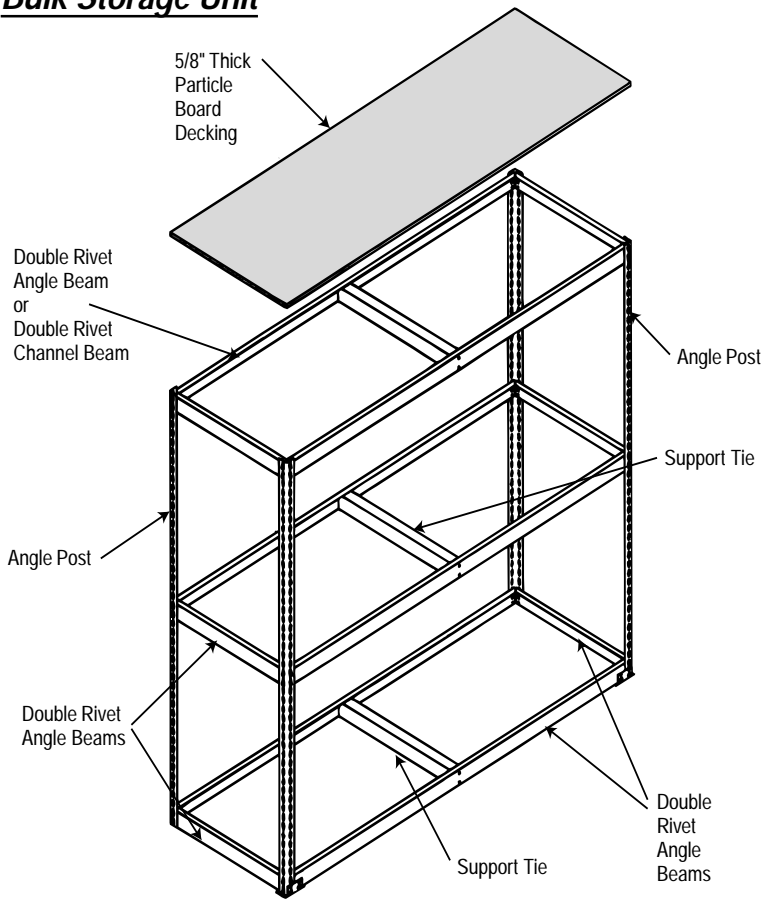
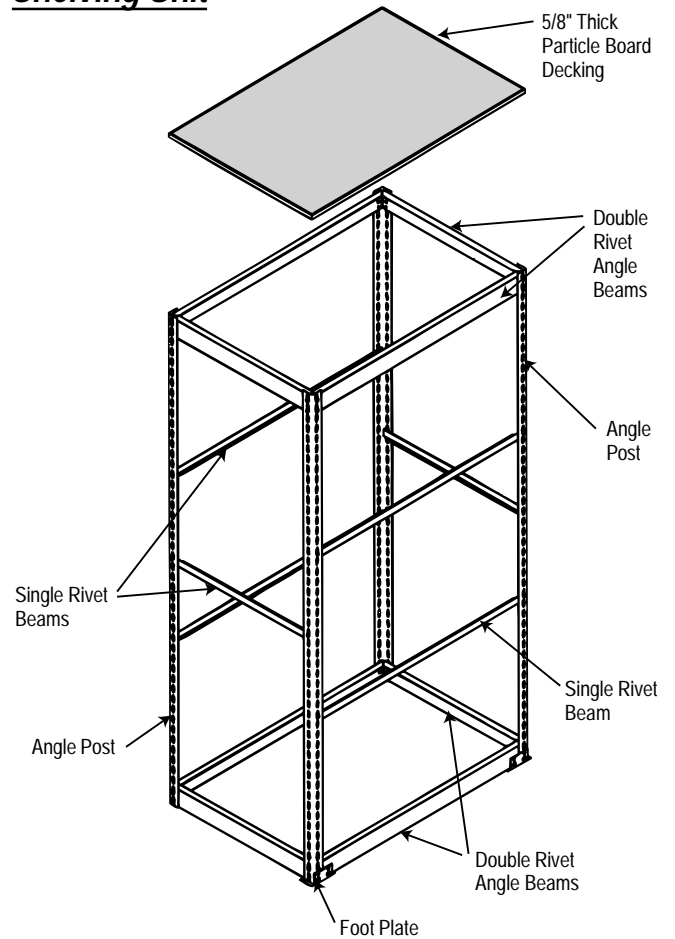


Installation Instructions

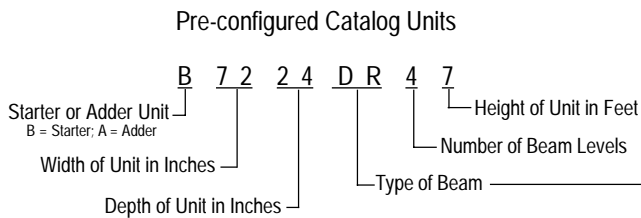
Bulk Storage Unit



Shelving Unit



Part Numbering System



- SR= Single Rivet Beams
- LP = Double Rivet Low Profile Beams
- DR = Double Rivet Angle Beams
- ZB= Double Rivet Z Beams
- DH = Double Rivet Angle Beams with Support Tie
- CH = Double Rivet Channel Beams with Support Tie
- PR= Punched Double Rivet Angle Beams
(to accept record storage support angles)
- PH= Punched Double Rivet Channel Beams with Support Tie
(to accept record storage support angles)

IMPORTANT - PRODUCT LIABILITY INFORMATION

READ ALL INSTRUCTIONS BEFORE PROCEEDING WITH ASSEMBLY. VITAL PRODUCT INFORMATION PERTAINING TO PROPER SETUP AND CAUTIONS ARE INCLUDED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE.

RETAIN THIS MANUAL FOR FUTURE REFERENCE

BORROUGHS CORPORATION

3002 N. BURDICK STREET • KALAMAZOO, MI 49004-3483
800-748-0227 • FAX 616-342-4161 • CANADA 800-968-0162

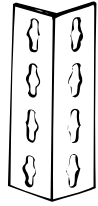
32-50500-000A
SEPTEMBER 1996

General Instructions:

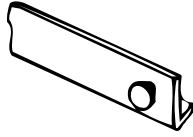
1. Check parts and bundles against packing slip to be sure all parts and bundles were received.
2. Sort parts so that like parts are together. This will make installation easier and faster.
3. Read through the entire instructions carefully - before attempting to assemble the units.

Tools Required:

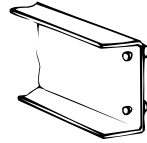
1. Rubber mallet or a hammer and block of wood.
2. Two pairs of pliers or two 7/16" wrenches for installing Foot Plates and/or Support Ties.



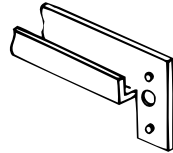
Angle Post



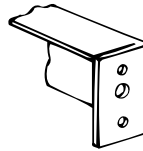
Single Rivet Beam



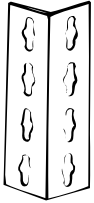
Double Rivet Channel Beam



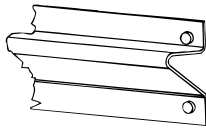
Double Rivet Low Profile Beam



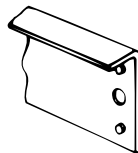
Support Tie



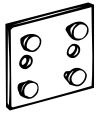
Heavy Duty Angle Post



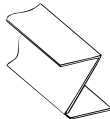
Double Rivet Z Beam



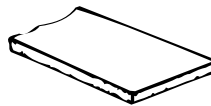
Tire Beam



Tie Plate Angle Post



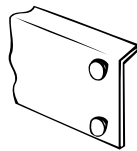
Z Tie



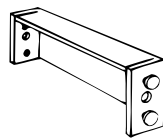
Particle Board



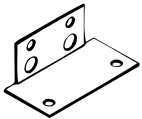
T Post



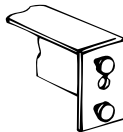
Double Rivet Angle Beam



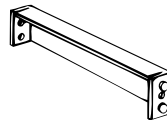
Back Spacer Tie



Foot Plate

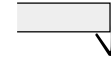


Aisle Tie



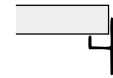
Wall Tie

Beam Profiles



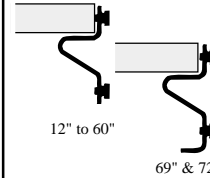
Single Rivet Beam

Shelving - standard duty



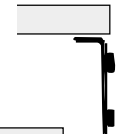
Double Rivet Low Profile Beam

Shelving - heavy duty



Double Rivet Z Beam

Shelving - heavy duty
Bulk Storage - standard duty



Double Rivet Angle Beam

Bulk Storage - standard duty



Double Rivet Channel Beam

Bulk Storage - heavy duty



Tire Beam

Tires and Wheels - standard duty

Intermix beam families on the same beam level

These beam families can be intermixed without decking problems:

- ◆ Single Rivet Beams
- ◆ Double Rivet Low Profile Beams
- ◆ Double Rivet Z Beams

These beam families can be intermixed without decking problems:

- ◆ Double Rivet Angle Beams
- ◆ Double Rivet Channel Beams

The above groupings cannot be intermixed and support decking.

Important Notice

At no time should personnel be allowed to climb or stand on shelving product. Safe access to all shelving levels should be provided with ladders and/or other devices which are in accordance with applicable OSHA regulations.

Wall, floor or top tie anchoring is recommended for units when the height to depth ratio exceeds 4.

Example: A 7' high x 18" deep unit has a height to depth ratio of 4.67 and should be attached to a firm restraint, such as a floor, wall or tied overhead across the aisle to an opposite upright assembly.

Bulk Storage Unit / Shelving Unit:

Beams are installed by placing both of the rivets in post slots, making sure the rivets are engaged, then striking the beam with a rubber mallet (or by placing a block of wood over the beam, to protect the finish, and striking with a hammer). See Figure 1. Make sure both rivets are fully seated on the bottom of the post.

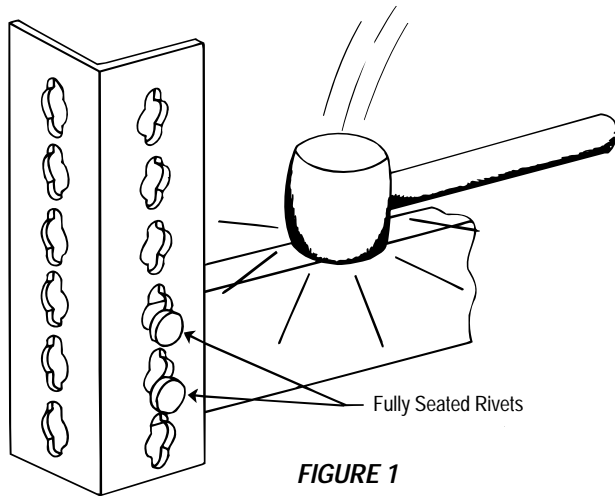
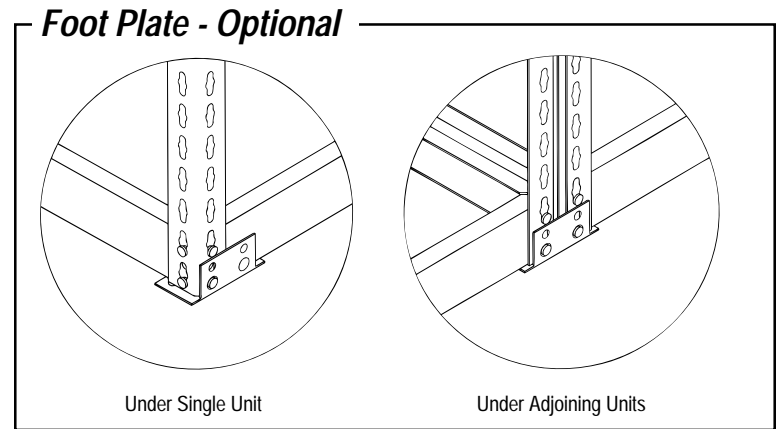


FIGURE 1



Units require, for stability, a full "perimeter" of double rivet beams, meaning (2) side-to-side and (2) front-to-back, at both top and bottom of each unit.

For best results, assemble the unit in this order:

Assemble the ends of the units installing double rivet beams front-to-back to the top and bottom of the posts. See Figure 2.

NOTE: Pre-configured catalog units - starter unit has (4) angle posts; adder unit has (2) T posts.

Then, attach the double rivet beams right-to-left to the assembled ends, starting on the bottom. When this step is complete, the unit stands on its own. See Figure 3.

NOTE: Pre-configured catalog channel beam units use angle beams located directly at floor level. Channel beams cannot be located directly at the floor level due to their larger face; they must be positioned up one hole on the post to allow proper seating of their rivets.

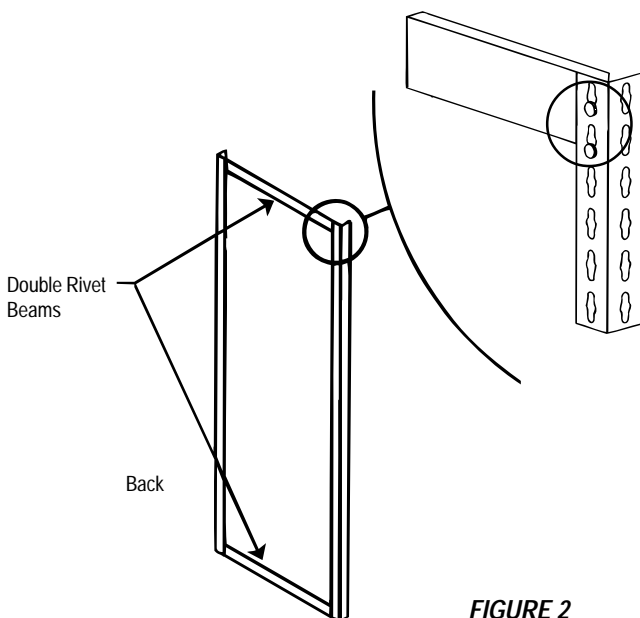


FIGURE 2

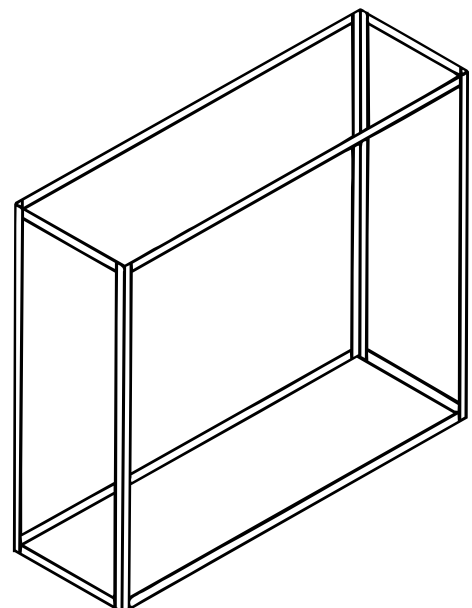


FIGURE 3

Bulk Storage Unit:

Support Ties - Optional

Support ties are used with the bottom and top level left-to-right double rivet angle and channel beams. They are installed from front-to-back as shown in *Figure 4*. Beams under 96" use (1) support tie in the middle of the beam while 96" beams use (2) support ties dividing the beam into thirds.

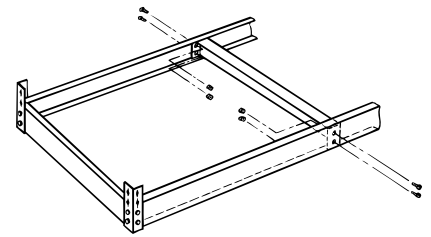


FIGURE 4

Intermediate Beam Levels

All units must have double rivet beams, left-to-right and front-to-back, installed at every level. If optional support ties are required, add to each intermediate level as shown in *Figure 4*.

Shelving Unit:

Intermediate Beam Levels

Units 24" or less in depth do not require single rivet beams at every front-to-back intermediate level.

Units 6', 7' and 8' tall must have (1) level of single rivet beams from the front to the back located in the middle of the unit. See *Figure 5*.

Units 9' and 10' tall must have (2) levels of single rivet beams from the front to the back dividing the unit into thirds. See *Figure 6*.

Units 11' to 16' tall must have (1) level of double rivet angle beams all the way around the perimeter, right-to-left and front-to-back located in about the middle of the unit and front-to-back single rivet angle beams running from front-to-back located about the midway of the halves. See *Figure 7*.

Units 30" deep or deeper must have single rivet beams front-to-back at every intermediate level. Additionally, units 11' to 16' must have an intermediate double rivet beam level around the perimeter located in the middle of the unit. See *Figure 7*.

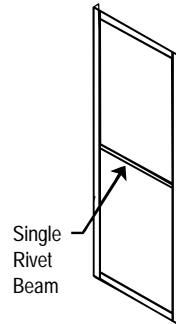


FIGURE 5

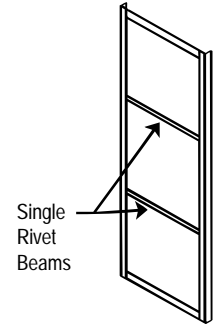


FIGURE 6

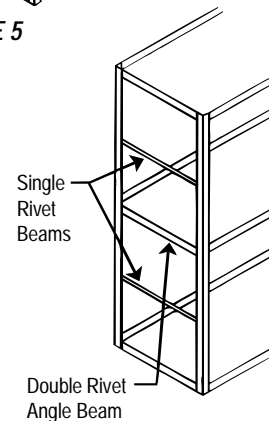


FIGURE 7

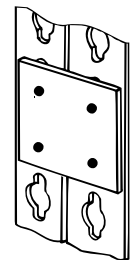


FIGURE 8

Accessories:

Tie Plates

Tie plates are recommended to tie adjacent units together and insure structure stability. Tie plates should be installed as shown in *Figure 8* and placed at the top and bottom of adjacent posts with additional tie plates no more than 48" apart.

Aisle Ties

Aisle ties are designed to join shelving together and to provide additional stability over aisle space. See *Figure 9*. **They Are NOT Designed To Carry Weight or Support Upper Level Walkways.** Install on aisle side of post, at height desired, in the same manner as a beam (See *Figure 1*). Aisle ties will not install at the same level as beams.

Back Spacer Ties

Back spacer ties are designed to space shelving when they are used in a back-to-back configuration and a space is desired between them. See *Figure 9*. Back spacer ties are designed and installed the same as the aisle tie. **They Are NOT Designed to Carry Weight.**

Wall Ties

Wall ties are designed to tie the shelving to the wall and to provide additional stability when required. See *Figure 9*. **They Are NOT Designed To Carry Weight.** Install to wall side of post, at height desired and bolt to wall (bolts or screws not supplied). Wall ties will not install at the same level as beams.

Accessories in Use

End View

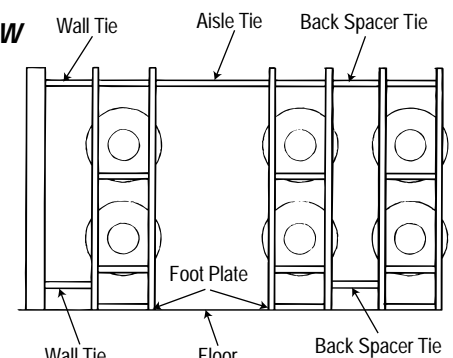


FIGURE 9