Flow Rack Installation Manual

Installing the System

General Installation Instructions

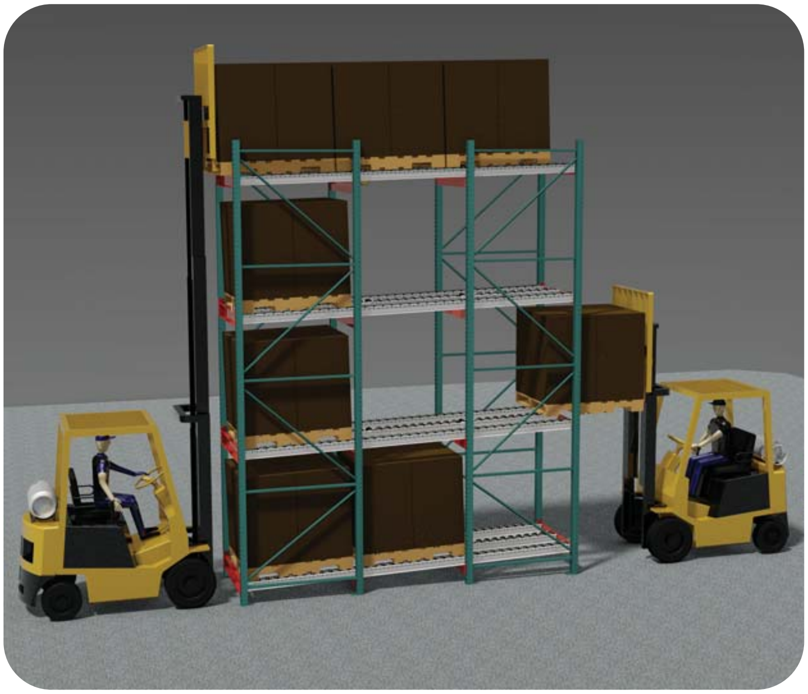
Rack Installation Instructions

Flow Track Installation Instructions

ALL PERSONNEL WHO COME IN CONTACT WITH THE FLOOR RACK SHOULD READ THIS MANUAL CAREFULLY!

Operators of industrial lift trucks must be trained and certified per OSHA regulation 29 CFR 1910.178.

Keep this manual in a convenient location for future reference, retraining, and orientation of new users of the product.



Guide to symbols in this manual:


figure 1

DANGER is indicated by a red exclamation point within a red triangle, as shown in figure 1. These symbols denote situations which could cause damage, injury or death.


figure 2

CAUTION is indicated by a yellow exlamation point within a yellow triangle, as shown in figure 2. These symbols indicate situations which require an extra measure of your attention.

STEEL KING®
Steel King Industries, Inc.
2700 Chamber St.
Stevens Point, WI 54481
(800) 826-0203 info@steelking.com www.steelking.com

INSTALLING THE SYSTEM

A quality dynamic storage system relies on six critical items. They are:

- Proper application of rail type
- Consistent quality pallets of the specified design
- Quality dynamic storage rails
- Quality rack structure designed to accommodate the rail and load
- Accurate and proper installation
- Good system maintenance

This instruction manual will address “accurate and proper installation”. The following tolerances are absolutely critical for good gravity flow results. These tolerances should be specified at the project development stage, included in the documentation for the installation pricing stage, included in the labor contract, reviewed at installation start up, and checked upon completion, prior to system sign off. We recommend the use of a transit or laser level to achieve these results.

General Installation Instructions

It is strongly recommended that ONE LANE be installed and tested for pallet flow prior to installing the remainder of the lanes.

Following are a few general installation practices you may want to follow to assure the system will perform as expected.

Install and fully test ONE complete lane prior to moving forward. Have the person responsible for system acceptance sign off on this first lane. Installation can then be continued with confidence.

As bays within a system are completed, assuming space allows, test each lane for proper flow. This “test-as-you-go” method allows the crew to depart shortly after the completion and testing of the final bay, which improves crew scheduling and reduces or eliminates the need for return “adjustment” trips. The person responsible for system acceptance and sign off customarily performs testing. Responsibility for this testing function should be clarified up front.

Rack Installation Instructions

Rack must be leveled, shimmed and securely anchored to ensure that all flow support beams are level and their elevations do not deviate from a true pitch line by more than ± 1/16".

The generally accepted procedure is to lay out the rack upright grid on the floor with chalk line and check elevation at each grid node with a transit or laser level to determine high point. *(See figure A1 for an example.)* All other node points will need to be shimmed to this high point. How much shimming is required at each point should either be mapped on a plan or written on the floor to within ±1/16". This will mean you need shims at 1/16" to achieve this tolerance.

Wheel Flow and Full Width Roller Installation requires maximum allowable pallet deflection of 1/8".

1/16" shims must be used and can be supplied by Steel King or others.

Rack uprights must be plumb and beams must be level.

Figure A1: Sample Rack Upright Grid

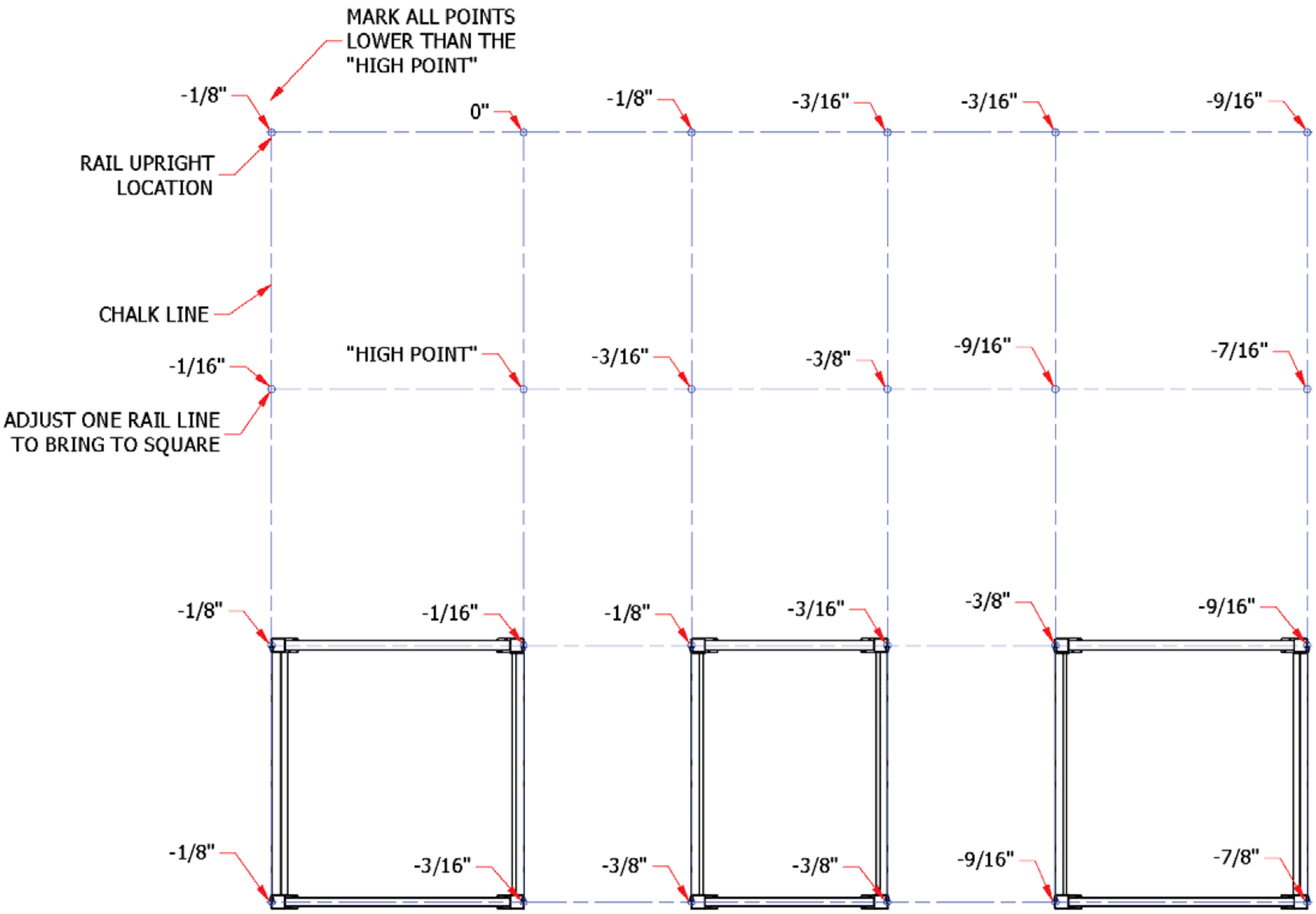


Figure A2: Sample Rack Upright Section A-A

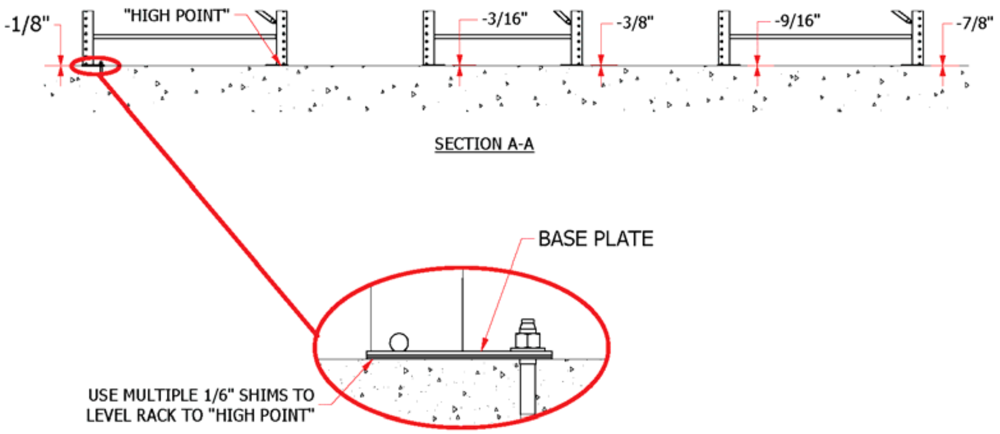
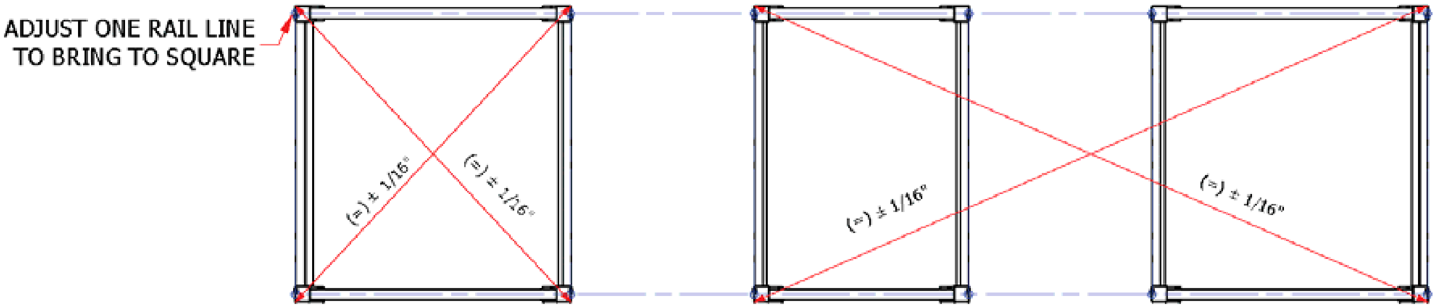


Figure A3



Rack sections must be square
(Check diagonal corner-to-corner dimensions to make sure they are equal).

Flow Tracks Installation Instructions

Beams supporting the rail must be adjusted or shimmed so that rails within a lane do not deviate from level by more than 1/16".

Rails must be installed so that from the front to the rear of the system, the rail does not deviate from a true line by more than 1/16". The end result is a flow lane in which the top of the wheels or rollers are sloped properly in a true plane.

To maintain these tolerances we recommend the following mounting details:

- All rails must be attached to the rack at every support beam, using a technique that prevents the rail from shifting or becoming detached during normal everyday use.
- Rack frames must be securely anchored using a technique that prevents shifting in any direction, which will result in out-of-alignment rail.
- Rails should be protected from forklift impact, which will result in out-of-alignment rail and component damage, thus affecting good flow characteristics. The most common installation method is to design and manufacture the load-end and unload-end beams in a manner in which the rail is hidden behind the beam, so it cannot be directly impacted by the forks.
- Install and fully test one complete lane prior to moving forward. Have the person responsible for system acceptance sign off on this first lane. Installation can then be carried on with confidence.
- Flow tracks must be installed parallel, with rolling element surfaces 90° to the side channels.

- Flow track sections must be square. Check diagonal corner-to-corner dimensions to make sure they are equal. *(See figure A4.)* ⚠

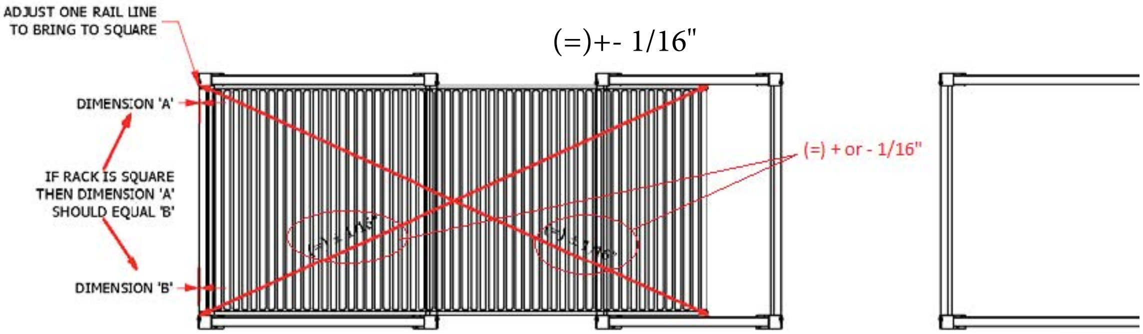


Figure A3

Rail must be installed at the specified slope for the application. The most common pitches used are 3/8" and 7/16" per foot; however, refer to Steel King's system drawing for the specific project or call Steel King for confirmation. The slope must not deviate from a true pitch line by more than 1/16".

The slope of the tracks must be consistent throughout the length of the lane to within ±0.1% of the design slope.

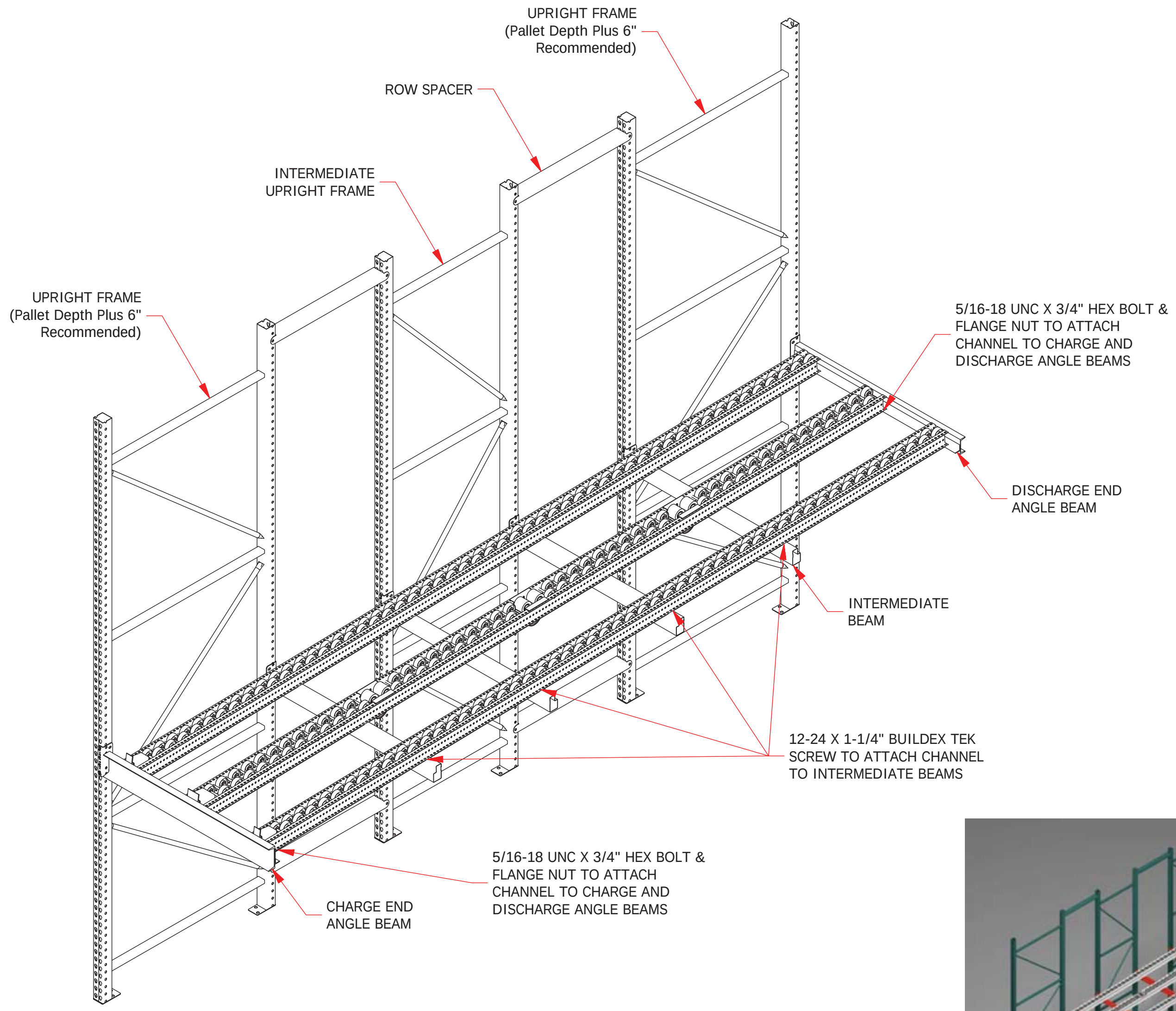
Bolt the flanges at each end of lane to create a structurally sound angle designed to carry the load and the impact of loading/unloading by fork lift trucks

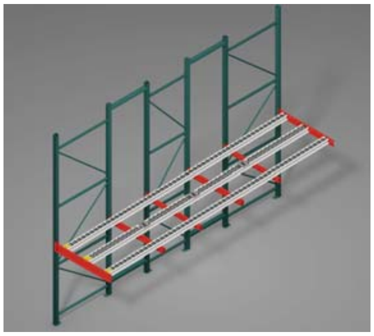
5/16" hex nut screws with whiz nuts are used to secure the tracks/rail to all intermediate beams to maintain the necessary track alignment and prevent the rails from shifting.

Maximum allowable deflection of pallet is 1/8".

Failure to observe the above minimum requirements may result in the voiding of the warranty. ⚠

INSTALLATION NOTES:





Each block of racking must be shimmed level to ±1/16" upright to upright.

1/16" shims must be used and can be supplied by Steel King or others.

Rack uprights must be plumb and beams must be level.

Flow tracks must be installed parallel, with rolling element surfaces 90°to the side channels.

Flow track sections must be square (check diagonal corner to corner dimensions to make sure they are equal).

Slope of the tracks must be consistent throughout the length of the lane to within ±0.1% of the design slope.

It is strongly recommended that one lane be installed and tested for pallet flow prior to installing the remainder of the lanes.

Failure to observe the above minimum requirements may result in the voiding of the warranty.

Steel King Industries, Inc.
2700 Chamber Street
Stevens Point, WI 54481

phone (800) 826-0203
info@steelking.com
www.steelking.com