

**Keystone
Storage
Rack**



Keystone Rack ...utilizing storage space efficiently

Keystone rack was developed in an effort to provide you with a total storage handling system; one that maximizes efficiency, uses the least amount of space, and delivers the best return on investment. It is designed for fast, simplified installation and offers a range of accessories that make it extremely versatile.

Built-in quality to last for years.

Keystone Universal Rack is constructed with quality and service built into each component. Keystone's strength is in its simplicity of design, consisting of two basic parts: rigid upright trusses and step-beams.

To implement the design, specially selected American made, heavy-gauge, high strength steel is used. This steel is roll formed into an upright column, with Keystone-shaped holes located every three inches to allow for vertical adjustment of beams. Step beams provide for optimum support of pallet loads of various sizes. The rack's base



plates have dual punched holes for ease of anchoring. The end result is our versatile Keystone Pallet Rack, packed with features that make it adaptable to a wide range of configurations.

- 1. Durability** – is provided by rigid upright trusses manufactured from American made, heavy-gauge, high strength steel.
- 2. High-Gloss Finish** – is assured with our electrostatic painting system providing an appealing color scheme to meet your requirements.
- 3. Twist Resistant Step-Beams** – feature a one-piece design assuring uniformity of shape and easy placement of accessories.
- 4. Keystone Locking Connector** – Keystone Locking Clip Connector features an integral safety catch. When engaged in the side of the column, the beam is locked onto the upright. If accidentally knocked upward, this locking clip helps prevent the beam from dislodging.
- 5. Stability** – is provided with pre-welded foot plates which include dual punched holes for easy anchoring to the floor.
- 6. Strong Connection Points** – are maintained with the Keystone shaped holes that are punched every three inches along the column face.
- 7. Fast installation** – is assured with the system's boltless beam connectors.

Upright truss selection guide

To select the proper upright truss, you must determine upright truss; depth, height, load capacity requirement and beam positioning.

To determine upright truss depth:

- Subtract 6" from pallet depth.

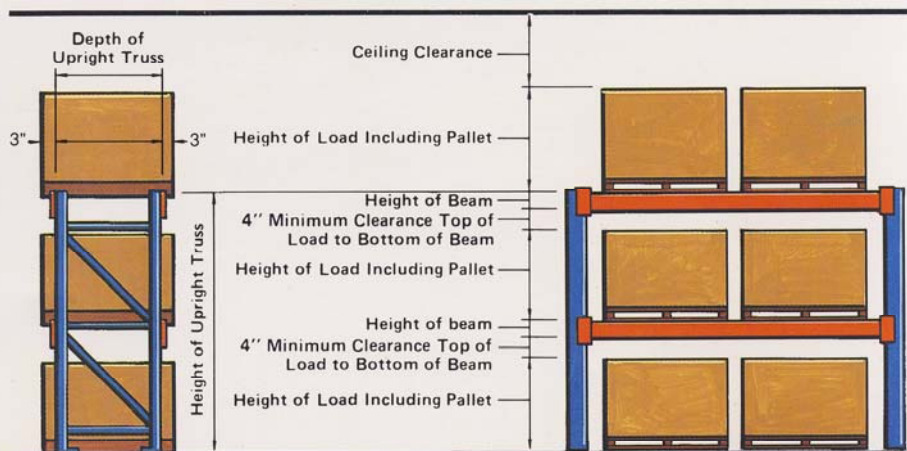
To determine upright truss height:

- Measure the height of the load (including the pallet);

- Add a minimum of 4" clearance between the top of the load and the bottom of the beam.
- Add the height of the beam;
- Provided the load height is the same in all levels, multiply the total height by the number of beam levels within the rack bay;
- Round up total upright height to the next foot (Example: 14'-5" rounds up to 15'-0").

NOTE: Should load height vary, figure each level separately. The distance from the top of a beam to the top of the next beam above it is always an even 3" increment.

COLUMN TYPES



KEYSTONE UPRIGHT TRUSS CAPACITY CHART (pounds)

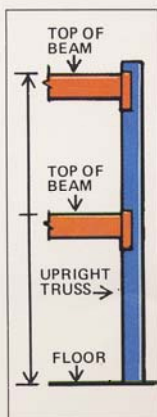
Load capacity of any upright truss will vary with the conditions of loading, bracing configuration and beam positioning. You should consider: floor condition, truck exposure, location, etc.

To determine upright truss load capacity requirement:

- Add the weight of all pallet loads between upright trusses (one rack bay). *Do not include pallets on the floor.*

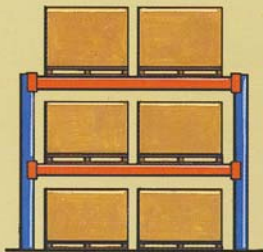
To determine upright truss type:

- Determine the distance from the floor to the top of the first beam or maximum beam spacing whichever is greater.
- Using the beam position and the load capacity requirement, determine the proper upright truss from the upright truss capacity chart.



Distance Floor to Top of First Beam or Max. Beam Spacing	KU23	KU24	KU33	KU34	KU35	KU37	KU43	KU45	KU47
24"	17,300	20,600	25,500	31,400	36,600	48,500	22,500	33,500	46,100
36"	17,300	20,600	25,500	31,400	36,600	48,500	22,500	33,500	46,100
48"	17,300	20,600	25,400	31,300	36,400	47,600	22,500	33,500	46,100
54"	17,300	20,600	24,900	30,500	35,700	47,200	22,500	33,500	46,100
60"	17,300	20,600	24,400	29,900	35,000	46,300	22,500	33,500	46,100
66"	17,200	20,200	23,900	29,300	34,000	45,000	22,400	33,300	46,100
72"	16,000	18,800	23,300	28,600	33,200	43,700	22,100	32,700	46,100
78"	14,800	17,300	22,600	27,800	32,100	40,800	21,600	32,200	45,900
84"	13,700	16,000	21,900	26,100	29,800	37,900	21,200	31,600	44,800
90"	12,700	14,800	20,500	24,400	27,600	35,100	20,800	30,800	43,500
96"	11,700	13,700	19,100	22,800	25,600	32,600	20,300	30,100	40,800

• Safety factor is 1.92 based on steel with minimum yield strength of 45,000 P.S.I.



Selecting Keystone beams and capacities

Assuming the use of very common flush type pallets, calculations can be made as follows: Multiply the maximum load width (in inches) times the number of loads between uprights. Add to this 3" to 4" for spacing between each load and uprights. This total is the beam span. For capacity required, multiply the maximum load weight (include pallet) times number of loads per pair of beams. This total is your capacity requirement per pair of beams. Use the chart to find the beams that meet or exceed your span and capacity requirements.

BEAM CAPACITY CHART (Pounds per pair, uniformly distributed load)

TYPICAL	KB35	KB37	KB40	KB42	KB45	KB47	KB50	KB52	KB55	KB57	KB60	KB65	
Span	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Capacity Deflection	Span
048"	8210 .14	9210 .13	9870 .12	10730 .11	11610 .11	12500 .10	13420 .10	14340 .09	15240 .09	16400 .08	17550 .08	18000 .07	048"
054"	7300 .17	8180 .16	8770 .16	9540 .15	10320 .14	11110 .12	11930 .12	12750 .11	13550 .11	14580 .10	15600 .10	17740 .09	054"
060"	6570 .21	7370 .20	7900 .19	8580 .18	9290 .17	10000 .16	10730 .15	11470 .14	12190 .13	13120 .13	14040 .12	15960 .12	060"
066"	5970 .26	6700 .25	7180 .24	7800 .22	8440 .21	9090 .19	9760 .18	10430 .17	11000 .16	11930 .16	12770 .15	14510 .14	066"
072"	5470 .31	6140 .29	6580 .27	7150 .26	7740 .25	8340 .23	8940 .22	9560 .21	10160 .20	10940 .19	11700 .18	13300 .17	072"
078"	5050 .36	5670 .34	6070 .32	6600 .31	7140 .29	7690 .27	8260 .26	8830 .24	9380 .23	10090 .22	10800 .21	12280 .19	078"
084"	4690 .42	5260 .40	5640 .37	6130 .36	6630 .33	7150 .31	7670 .30	8200 .28	8710 .26	9370 .25	10030 .24	11400 .23	084"
090"	4380 .48	4910 .45	5260 .43	5720 .41	6190 .38	6670 .36	7160 .34	7650 .32	8130 .30	8750 .29	9360 .28	10640 .26	090"
092"	4290 .51	4800 .47	5150 .45	5600 .43	6060 .40	6520 .38	7000 .36	7480 .34	7950 .32	8560 .31	9160 .29	10410 .27	092"
094"	4130 .52	4700 .50	5060 .47	5480 .46	5930 .42	6390 .39	6850 .37	7320 .35	7780 .33	8380 .32	8960 .31	10190 .28	094"
096"	4000 .53	4600 .52	5000 .49	5370 .47	5800 .44	6250 .41	6710 .39	7170 .37	7620 .34	8200 .33	8780 .32	10000 .29	096"
098"	3830 .54	4510 .54	4850 .51	5260 .48	5690 .45	6120 .43	6570 .40	7020 .38	7460 .36	8030 .35	8600 .33	9770 .31	098"
100"	3680 .56	4420 .56	4740 .53	5150 .49	5570 .47	6000 .45	6440 .42	6880 .40	7310 .37	7870 .36	8430 .35	9580 .32	100"
102"	3550 .57	4260 .57	4640 .55	5050 .52	5460 .49	5880 .46	6310 .44	6750 .41	7170 .39	7720 .37	8260 .36	9390 .33	102"
106"	3280 .59	3900 .59	4400 .59	4860 .56	5260 .53	5660 .50	6080 .47	6500 .45	6900 .42	7430 .40	7950 .39	9040 .36	106"
108"	3130 .60	3700 .60	4250 .60	4770 .58	5160 .55	5560 .52	6000 .49	6370 .46	6770 .44	7290 .42	7800 .40	8870 .37	108"
114"	2790 .63	3350 .63	3790 .63	4380 .63	4890 .62	5200 .58	5650 .55	6040 .52	6420 .49	6910 .47	7390 .45	8400 .42	114"
120"	2560 .67	3050 .67	3480 .67	4000 .67	4580 .67	5000 .64	5370 .60	5740 .57	6100 .54	6560 .52	7000 .50	8000 .46	120"
126"	2310 .70	2760 .70	3130 .70	3620 .70	4130 .70	4700 .70	5110 .67	5460 .63	5810 .60	6250 .57	6690 .55	7600 .51	126"
132"	2100 .73	2520 .73	2850 .73	3270 .73	3760 .73	4260 .73	4880 .73	5220 .69	5540 .65	5970 .63	6380 .60	7260 .57	132"
138"	1930 .77	2330 .77	2620 .77	3030 .77	3460 .77	3940 .77	4490 .77	4990 .75	5300 .71	5710 .68	6110 .66	6940 .61	138"
144"	1770 .80	2120 .80	2390 .80	2750 .80	3160 .80	3620 .80	4110 .80	4660 .80	5080 .78	5470 .75	5850 .72	6650 .66	144"

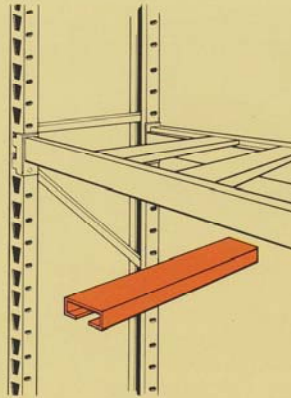
- Beam deflection limited to 1/180 of span.
- Capacities below the heavy line are limited by deflection and not stress.
- Safety factor is 1.67 based on steel with minimum yield strength of 50,000 P.S.I.

SPECIFICATIONS AND GENERAL

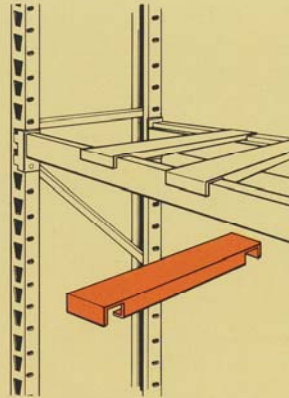
- Frame and beam capacities meet or exceed the requirements of 1964 RMI Standard and latest AISI Specifications.
- For frames and beams with greater capacity or meeting other specifications, contact your dealer or Applied Dynamics.

Accessories add versatility

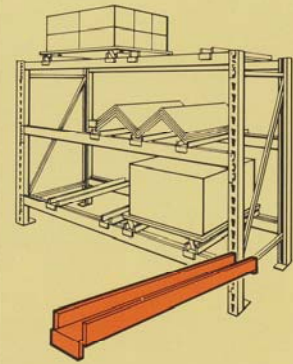
Keystone rack includes a full compliment of accessories for expanding its adaptability in storing a multitude of products. Drums, rolls, odd shaped items, small packages, skids, and much more can be efficiently stored.



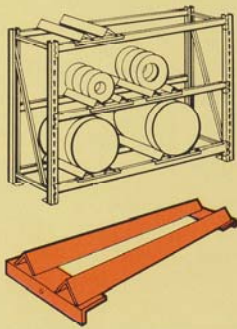
PALLET SUPPORT
Designed to fit flush in step-beams providing additional pallet support.



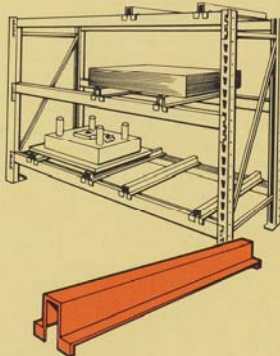
FLANGED PALLET SUPPORT
Overlapped in front and rear to prevent shifting and dislodging.



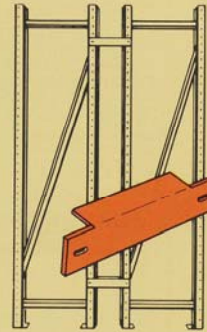
SKID CHANNEL
Used to store skids or containers equipped with legs or runners.



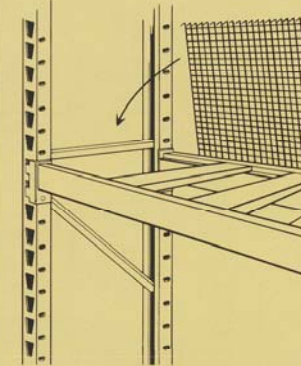
DRUM CRADLE
Recommended for drums, cylinders and small coil storage.



FORK CLEARANCE BAR
For storing dies, plywood, etc. — any item not palletized but handled by forks.

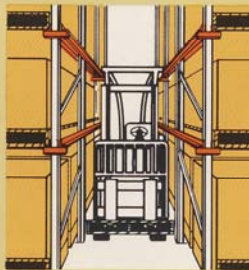
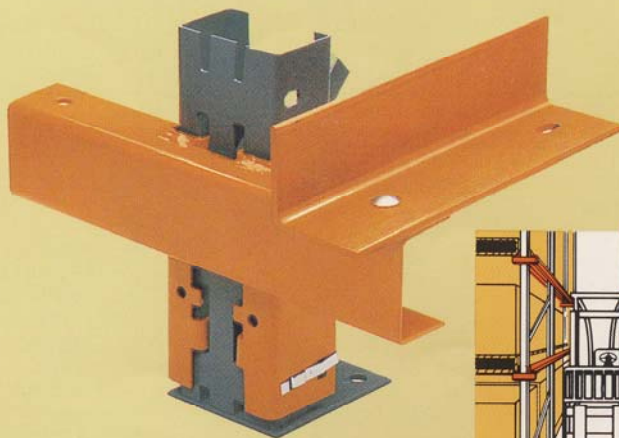


ROW SPACER
Used to connect racks placed back-to-back.



WIRE MESH DECKING
Wire mesh fits on beams for the storage of products. Open mesh does not accumulate debris and offers see-through visibility.

Keystone Drive-in/Drive-thru systems.



Keystone Drive-In and Drive-Thru Storage Systems are recommended for high-density storage where identical or similar size loads constitute the bulk of the storage. The benefits of our high-density storage system are related directly to efficiency and productivity. These systems eliminate the high cost of required multiple aisle space for storage and retrieval, thus providing more efficient use of the storage cube. Since product flow is a vital part of the system, operations that necessitate stock rotation are easily managed in a Drive-In/Drive-Thru System. For complete information and specifications to meet your requirements, call Applied Dynamics.

Meeting the challenge of inner space!

At Applied Dynamics, we have made a solid commitment to quality and service. This dedication to excellence is exemplified in the performance of our Palmer-Shile and Keystone brand storage systems. Because we are customer-driven, we strive to provide an immediate response to industry needs. Our engineering emphasis is in creating efficient storage and handling products that are universal and compatible in maximizing cost efficiencies within our customer's operations. In addition to a comprehensive standard product line, we provide custom engineered designs, utilizing computer-analyzed load data, as applicable, to effectively solve your most challenging storage problem needs.

- A) **Palmer-Shile Cantilever** – for long loads in narrow aisles.
- B) **Palmer-Shile Selective Systems** – for light to heavy duty applications.
- C) **Keystone Selective Rack** – for versatile storage and access to every load.
- D) **Keystone Drive-In Racks** – for high-density storage.
- E) **Keystone Storage Systems** – for universal storage applications.
- F) **Applied Dynamics Series 7** – for compatibility with ordinary keyhole patterns.
- G) **Structural Steel Racking** – Selective and Drive-In.

We welcome the opportunity to help you meet the challenge of inner space.



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