

TECH DATA

ActivRAC™ 16P

MOBILIZED STORAGE SYSTEM

Spacesaver Industrial patent pending ActivRAC 16P mobilized storage systems, designed specifically for manufacturing, warehouse and distribution environments, provide the safest, most reliable, durable, and easiest user operation available today. Flexible system designs will meet the most demanding industrial requirements. c-UL-us system listed. Unique, innovative design allows you to mobilize your existing racking or industrial shelving and install the system on your existing floor. Flexible system design allows you to store more in less space as well as free up value generating space and better organize your materials resulting in improved operational efficiency.

BENEFITS

Spacesaver provides a state-of-the-art, mobilized storage systems design that provides a convenient control operation and safeties to provide user and materials protection.

SYSTEM OPERATION

1. Open an aisle with one-touch, user-friendly, directional operation (at the carriage mounted control or via optional infrared or RF remote control aboard a fork truck).
2. Press a safety "Stop/Reset" button to immediately stop any moving carriage(s).
3. Easily distinguish a system's operational status via the lighted indicators on each carriage.
4. Be protected by in-aisle safety devices that stop carriage movement when a person or object (i.e., box, ladder, or fork truck) is detected.

SAFETY FEATURES

1. When carriages are in motion, any safety activation (PhotoSweeps® and aisle entry sensors) will stop the aisle from closing on that aisle and the mobile carriage LED indicators will illuminate flashing red on both sides of the aisle where the safety was activated.
2. Depressing any "Stop/Reset" button during carriage movement will bring all carriages to a stop.
3. After carriages complete their movement the open aisle will be locked out and the control head indicator on either side of the open aisle will illuminate "Aisle in Use" - it's now safe to enter the aisle.



ActivRAC 16P mobilized storage systems are safe, space-efficient and easy to use. They are designed for continuous use in manufacturing, warehouse and distribution environments and provide durable, reliable and low maintenance operation. They feature fully-welded wheel assemblies that ride on either low profile beveled top mount rails or recessed mounted rails which allow a flush rail/floor configuration. Systems are provided with safety sweep and aisle entry sensors to ensure robust operator safety.

DESIGN AND CAPABILITY

A. Powered Systems

- Carriage design capability permits virtually unlimited carriage layout configurations.
- Soft-start carriage movement reduces system start-up amperage draw and eliminates jostling of stored material during movement.
- Positive direct wheel DC motor drive with soft start/stop, dynamic braking, current limiting and automatic time out.
 - Provides smooth, even carriage movement.
 - Protects material stored.
 - Provides longer system life.
- Infrared distance sensors for precise carriage positioning.
- c-UL-us system listed to assure electrical safety.
- Optional dual controls for accessing a system module from both the front and rear.

B. Top Mount Rail Design Option

All rails are installed on top of concrete slab.

- 3/8" (9.5mm) tall x 4-1/2" (114mm) wide steel rails with black zinc finish, with beveled edges. ADA compliant.
- Rail and carriage design allows concrete slab to be unlevel at the following maximum variation
 - 3/16" (4.8mm) variation over any 2' (6m) rail run
 - 1/4" (6.4mm) maximum variation over any 10' (3.04m) rail run
- Provides minimal interruption of material handling equipment
- Solid, top mounted on floor, supporting up to 16,000 lbs (7,257 kg) per wheel assembly.
- Disperses heavy wheel point loads to floor.
- Designed to operate under heavy, long-term, cyclic stress loads.
- Provides the solid basic foundation required for heavy-duty mobilized storage systems assuring low maintenance and easy operation.
- Stagger rail joints across adjacent rail runs.

C. Recessed Rail Design Option

All rails are installed flush with concrete slab.

- 3/8" (9.5mm) tall x 4" (101.6mm) wide steel rails with black zinc finish, designed to be installed flush into the concrete floor
- Rail and carriage design allows concrete slab to be unlevel at the following maximum variation
 - 3/16" (4.8mm) variation over any 2' (6m) rail run
 - 1/4" (6.4mm) maximum variation over any 10' (3.04m) rail run
- Provides flush non-interrupted transition for material handling equipment
- Solid, flush mounted in floor, supporting up to 16,000 lbs (7,257 kg) per wheel assembly.
- Disperses heavy wheel point loads to floor.
- Designed to operate under heavy, long-term, cyclic stress loads.
- Provides the solid basic foundation required for heavy-duty mobilized storage systems assuring low maintenance and easy operation.
- Stagger rail and load distribution joints with each rail run.
- Stagger rail joints across adjacent rail runs.

D. Wheels

- 6" (152mm) Diameter Load and Drive Wheels
- Precision machined solid steel wheels.
 - Provide easy movement.
 - Prevent premature wear.
 - Roll easier than smaller wheels.

E. Carriage Base/Rack Flue Spacer Articulation (Back to Back Racking Configuration)

- Enables system to be installed on typical existing concrete floors without the need for leveled rails, footings, or second floor installation
- Allows system to track and transfer the rack loading equally to all carriage wheels.



F. Uniframe Wheel Assemblies & Carriage Base

- Fully welded uniframe wheel assemblies.
 - Provides maximum strength for the load and cyclic stress requirements of a mobile system.
 - One-piece construction assures wheel alignment.
- Assembled structural steel carriage base has a maximum capacity of 16,000 lbs (7,257 kg) per single or 32,000 lbs (14,514 kg) back-to-back rack section.

G. Multiple Synchronized Motors

- Number of motors varies with load, thereby, providing the most cost effective design.
- Provides smooth, even carriage movement.
- Maintains proper carriage alignment through closed loop motor feedback and control on all individual motors within carriage regardless of length or weight load distribution. Eliminates racking and binding without the use of tubular or solid steel drive shaft systems.

H. Cross Bracing

- Keeps wheel assemblies in exact alignment.
- Provides rigid base for racking or shelving.

I. Photo Sweep®

- Extends the entire length of both sides of the carriage, stopping movement and slightly backing carriage away when an obstruction is detected.
- One invisible light beam positioned at bottom edge of every carriage provides added safety.
- Standard on all ActivRAC 16P mobilized storage systems.

J. Aisle Entry Sensor

- Automatically stops or prevents carriage movement when a user enters an aisle.
- Should a user enter a closing aisle, the system will stop all carriage movement and that aisle will need to be reset to resume operation.
- Manual reset at the opened aisle provides additional safety by prompting users to visually check the open aisle before resetting the system.
- Solid state circuitry and photoelectric technology ensures long term system reliability.
- Standard on all ActivRAC 16P mobilized storage systems.

K. Beacon & Horn

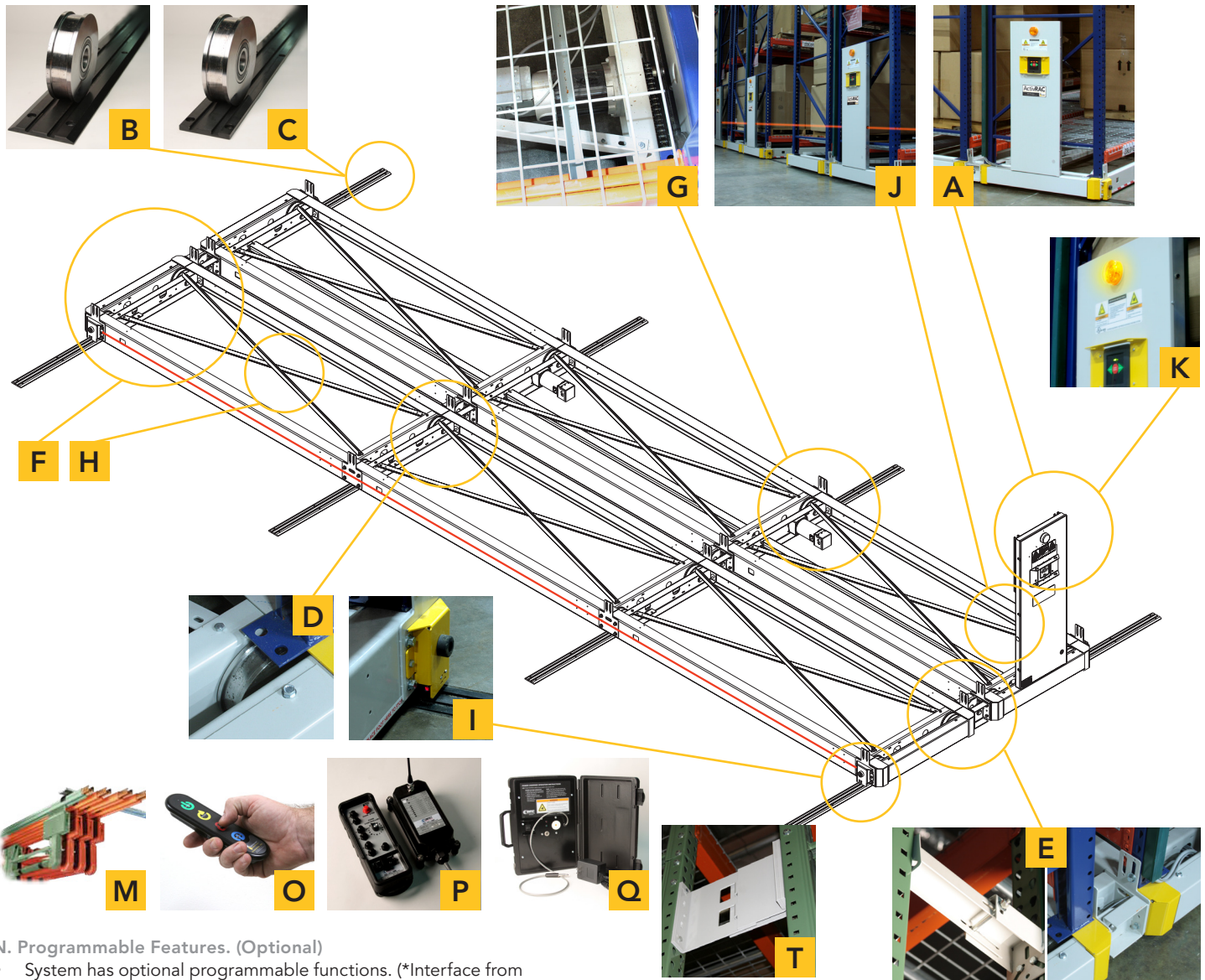
- Flashing beacon warns of carriage movement.
- Horn warns of carriage movement in areas where beacon cannot be seen.

L. Covered Wiring Raceway

- Protects wiring from abuse and contamination.

M. Overhead Buss Bar Power Distribution System

- Access aisle can be as large as needed.
- Keeps aisle free from wiring obstructions.



N. Programmable Features. (Optional)

- System has optional programmable functions. (*Interface from building management or security system will be required by customer)
 - System Priority Aisle
 - System Close Park
 - System Closed/Night Park*
 - System Fire Park*

Note: Parks and Auto-moves can also be triggered based on time of day and day of week.

O. Infrared Remote. (Optional)

- Enables operator on a fork truck to operate a system control head within close proximity of the control head without the need to get off the truck.
- Controls Move Left, Move Right, Stop/Reset when directed at the control head and at the needed activation location.

P. Radio Frequency Remote. (Optional)

- Enables operator on a fork truck to open an aisle remotely from up to 1000' with no building or large equipment obstructions, or up to 350' with obstructions.
- System must also have aisle entry sensors and used in conjunction with the infrared remote so that the system must be in a clear or ready green state to activate the aisle with the RF remote remotely. If the system is in use, the RF Remote will not remotely open any requested aisle in the system.
- A single RF remote is capable of controlling up to six (6) carriages in a

single module and up to fifteen (15) modules from a single remote.

Q. Power Override Unit. (Optional)

- Handheld rechargeable battery unit enables a single carriage to be moved at a reduced speed if a power failure was to occur and the system needed to be accessed.

R. Touch Pad Control (Optional)

- Can be utilized to access a system module or specific aisles
- Features pin access with audit trail capability
- Can track who and when system or aisle is accessed
- Can limit access to specific aisles by user

S. Computer Interface (Optional)

- Computer interface allows aisle selection via PC. (Interface to WMS or ERP system provided by customer)

T. Seismic Articulation Joint SAJ (Optional)

- Designed to structurally couple piggy-back racking uprights together during excessive ground movement often caused by an earthquake
- Allows the mobile carriages to freely articulate when operating normally over unlevelled rail



SPECIFICATIONS AND SAFETY

coat paint. Structural bases shall be placed back to back with minimum 6" (152mm) clear flue between back-to-back carriages.

RAIL- TOP MOUNT:

Rail shall be, 4140 steel bar 4 1/2" (114mm) wide x 3/8" (9.5mm) high with black zinc finish. Rail edges shall be beveled down to a maximum of 3/16" (4.8mm) to allow for the rail to be transversed by material handling equipment. Rail shall disperse the wheel point loads to structural slab. Rail shall have two permanently mounted floor anchors maximum 15" (381mm) on center. Rails shall be installed on top of concrete slab. Rail and carriage design allows concrete slab to be unlevel at the following maximum variation of 3/16" (4.8mm) variation over any 2' (0.6m) rail run and 1/4" (6.4mm) maximum variation over any 10' (3.04m) rail run.

RAIL- RECESSED MOUNT:

Rail shall be, 4140 steel bar 4" (101.6mm) wide x 3/8" (9.5mm) high with black zinc finish. Rail shall disperse the wheel point loads to structural slab. Rail shall have two permanently mounted floor anchors maximum 15" (381mm) on center. Rail shall be installed recessed into concrete slab and flush to top of concrete slab. Rail and carriage design allows concrete slab to be unlevel at the following maximum variation of 3/16" (4.8mm) variation over any 2' (0.6m) rail run and 1/4" (6.4mm) maximum variation over any 10' (3.04m) rail run.

MOBILE CARRIAGE BASES:

Assembled structural steel carriage base will have a minimum capacity of 16,000 lbs. (7,257 kg) per single and 32,000 lbs. (14,514 kg) per back-to-back rack section. On back-to-back configurations, individual wheel assemblies must be connected with an articulated carriage base/rack flue spacers in order to have the system track and transfer the rack loading equally to all carriage wheels. Each wheel assembly shall be equipped with two wheels, minimum 6" (152mm) diameter steel wheels. Wheels are equipped with two permanently lubricated and shielded radial ball bearings. Wheel capacity 8,000 lbs (3,628kg) each. Wheels have solid steel axles of 1-3/8" in (35mm) diameter. Wheels shall be dual flange, all wheel guided. All carriage sections between wheel assemblies have integral cross bracing to maintain accepted tolerances for function of systems. Side profiles shall provide and maintain wheel assembly alignment and squareness. These profiles shall be pre-drilled at the factory but are bolted, and assembled on the job site as integral carriage members. Wiring shall be routed through an enclosed housing channel to protect the electronic wiring harness. Structural steel side profiles shall be minimum 6.165" (157mm) high, 8 gauge (4.2mm). Finish shall be powder

POWER & CONTROLS:

System power requirements - 120 VAC single phase input. Powered carriages shall be equipped with 1/4 HP; 90-volt DC gear motors. Multiple carriages shall be moved with a single activation of a carriage control and/or via an infrared or RF remote. Each carriage shall be equipped with one or more 1/4 HP, 90-volt DC gear motors, depending on load rating. Each independent drive shall be synchronous and current limiting to maintain proper alignment through closed loop motor feedback and control on all individual motors within the carriage regardless of length or weight load and eliminate racking and binding. Motor and motor controllers shall provide for soft-start/ soft-stop movement, current limiting, and automatic time-out. Carriage movement to be selectable between sequential to minimize power demands on start-up, or block movement for faster access Motors and power train shall provide for maximum carriage travel speed of 3" (76mm) per second. All power transfer to wheels to be done by chain drive. Power to mobile units provided by an overhead buss bar system. Communication between carriages is provided by overhead cable festoon. Power supply to be provided by others.

SAFETY FEATURES:

The following safety features are to be provided: Photoelectric safety sweep scanning the full length of both sides of each carriage. The sweep will prevent or immediately stop movement if an obstruction is encountered or the beam is broken. Photoelectric aisle entry sensor shall be positioned at each entry location. The aisle entry beam will prevent or immediately stop movement if an obstruction is encountered or the beam is broken. Status of the safeties to be displayed on the control unit. Stop pushbutton shall be provided at each aisle control. A warning horn shall be provided whereupon activation of an aisle movement pushbutton it will sound for the first 3 seconds of carriage movement. A flashing yellow warning light is provided on the carriage ends that will flash during system movement.

Specifications are subject to change
Patent Pending



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