OPERATION INSTRUCTIONS
FOR
SPACESAVER
MECHANICAL ASSIST SYSTEMS

SYSTEM PREPARED FOR: ____________________________________________

SPACESAVER ORDER NUMBER: ________________________________

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REV. LEVEL 7.0
Mechanical Assist Operation

The Spacesaver mechanical assist systems provide a simple and energy efficient means to increase storage or filing capacity without expanding facilities. The intent here is to provide information necessary for the operation of your system. This document, coupled with your on site training, will provide the means for the safe, efficient and non-abusive use of the system. Subsequent training of new personnel is the responsibility of the area supervisor. This overview of operation and safety features may include information about options not incorporated into your unique Spacesaver System.

1. Selecting An Aisle:

   1.1 At the front of each carriage is located a 3 or 1 spoke drive hub. Grasp a rotating soft touch hand knob and turn the hub in the direction you wish the carriage to move.

   1.2 Do not roll the carriages with such effort that they bang together. Remember that this drive system gives tremendous mechanical advantage. With just one pound of effort you can move 4,000# with the standard drive. Some drive options will allow you to move up to 10,000# with just 1 pound of effort. In addition, a 36” (914 mm) aisle can be opened in as little as 6.8 to 14.7 turns of the hub.

   1.3 Make certain that the aisle you are closing is unoccupied. Also make certain that there is no media extending into the aisle and that there is nothing laying in the aisle.

2. Your Role In Maintaining The System:

   2.1 If you detect a problem developing in the operation of the system, bring it to the attention of your supervisor immediately.

   2.2 Keep the aisles clear of all obstructions.

   2.3 Keep the floor and tracks free of small items like paper clips, pens, paper, etc.

3. Using The Optional Safety Locking Handle:

   3.1 This feature provides a means for the operator to lock the carriage into position while using the aisle. It consists of a pin located in the hub of the spoked wheel and a mating plate of holes located just behind the hub. Once the carriage is brought to a complete stop the operator can push the pin into a hole in the plate thus locking the carriage in place.

   3.2 Caution: Never try to engage the pin into a hole while the carriage is moving even slightly. This device is not a brake!

   3.3 Each pin is fitted with a visual indicator. When the pin is in the unlocked position the light green color is visible. When in the locked position, the light green indicator is not visible.
4. Using The Optional Bottom Mount Lock:
   4.1 This feature provides media security by mechanically locking the system.
   4.2 The lock will be found near floor level on the outside of the first or last carriage.
   4.3 A special barrel style key is required to release the lock handle from its housing. Once the lock handle pops out, turn it 180° to open and snap the handle back into its housing. Failing to do this may cause damage to the lock, floor covering or carriage.
   4.4 The key is also required for re-locking. Once the lock handle pops out, turn it 180° to lock and snap the handle back into its housing.
   4.5 The key should be removed in both the locked and unlocked positions. The key should be kept by the area supervisor.

5. Using The Optional Waist High Lock:
   5.1 This feature provides media security by mechanically locking the system.
   5.2 It is conveniently located on the front of a carriage at about waist level. The key is required for locking and unlocking. The key should be removed when not in use.
   5.3 Rotate the polished chrome handle 1/4 turn to clockwise engage or counter-clockwise disengage the cam latch mechanism with the striker plate in the floor.
   5.4 Rotate the key 1/2 turn to counter-clock lock or clockwise unlock. The key should be kept by an area supervisor when not in use.

6. Using the Optional Hub Lock:
   6.1 Position the locking carriage in the desired location.
   6.2 Push the locking pin in to engage with the detent plate.
   6.3 Use the key to turn the lock, which prevents the pin from being pulled from the detent plate.
   6.4 The key should be removed when not in use and should be kept by an area supervisor.

7. Using The Optional Photoelectric Safety Sweep:
   7.1 If carriage movement begins while you are in the aisle, it can be stopped by breaking the invisible light beam constantly being projected along the entire length of each carriage. If an obstruction of any kind is detected, the carriages will come to a stop. The beam sweeps for obstructions close to the floor.
   7.2 The safety sweep may also prevent damage to material left laying in the aisle.
   7.3 Remember that sweep activation must be done from floor level. Therefore, never climb on the shelving.
   7.4 The sweep will automatically reset itself after a short time out.
8. Using The Optional Electro-Mechanical Safety Sweep:

8.1 If carriage movement begins while you are in the (Powered) aisle, it can be stopped by applying pressure to the safety sweep located along the full length of the carriage just above the floor level.

8.2 The safety sweep may also prevent damage to media left lying in the aisle.

8.3 Remember that sweep activation must be done from floor level. Therefore, never climb on the shelves.

8.4 The sweep will automatically reset itself after a short time out.

8.5 If your safety sweep is battery-powered, a readout head, like the one illustrated at the left, will be mounted to the front of each carriage. The light on the right will come on to indicate when the sweep has been activated. The light on the left will blink when the four “D” cell batteries need to be replaced.

**Note:** 8.6 and 8.7 apply to electro-mechanical and photo electric sweeps.

8.6 If your safety sweep is line-powered, a readout head, like the one illustrated at the left, will be mounted to the front of a stationary shelving unit at the right or the left side of the system. The light will glow steady red when a safety sweep is not activated. The carriage can be released and moved away from a sweep obstruction by inserting the yellow safety override key into the slot in the readout head.

8.7 Note that the safety override key is designed to fit in only one position. Do not force the key into the slot. The key should be kept by the area supervisor when it is not in use. Call your service representative immediately if you must use the safety override key continuously.

9. Using The Optional Mechanical Safety Sweep & Brake (Non-Powered):

9.1 If carriage movement begins while you are in the aisle, it can be stopped by applying pressure to the safety sweep located along the full length of the carriage just above the floor level.

9.2 The safety sweep may also prevent damage to media left lying in the aisle.

9.3 Remember that sweep activation must be done from floor level. Therefore, never climb on the shelves.

9.4 The sweep will automatically reset itself by back turning the mechanical assist handle, thus, enabling the user to remove the obstruction from the aisle.
10. **Using The Optional Auto Aisle Lock:**

10.1 Step up to the aisle you wish to close. Check the aisle to see that it is clear of personnel and obstructions. Press the large PUSH TO UNLOCK button on the carriage which must move to close the aisle. The red arrow pointing to the open aisle will change to green.

10.2 Grasp a rotating soft touch hand knob and turn the hub in the direction you wish the carriage to move. Clockwise for right travel or counter clockwise for left travel.

10.3 As the selected aisle begins to open the arrow governing it will change from green to red. Reverse movement is now restricted.

10.4 If while opening an aisle you decide to reverse carriage direction, do the following. Bring the carriage to a full stop. Press the large PUSH TO UNLOCK button to change the red arrow to green. Move the carriage to re-close the aisle. You must then press the small MANUAL RELOCK button at the open aisle to re-lock and secure the aisle.

11. **Using The Optional Aisle Lights:**

11.1 Use of this feature requires no conscious effort on your part. The lights will come on when the aisle is fully opened. They will go out only when the aisle is closed and another aisle is selected.
1. Selecting an Aisle:
   1.1 At the front of each carriage is located a disk with 2 rotating handles attached. Grasp either handle and rotate the disk in the direction you wish the carriage to move.
   1.2 Do not roll the carriages with such force that they bang together. The mechanical assist carriage drive system gives the operator tremendous mechanical advantage.
   1.3 Make certain that the aisle you are closing is unoccupied. Also, make certain that there is no media extending into aisle and that there is nothing laying on the floor.

2. Using the safety locking pin in the control:
   2.1 This feature provides a means for the operator to lock the carriage into position while using the aisle. It consists of a pin located at the outer perimeter of the disk and a matching set of holes just behind the disk. Once the carriage is brought to a complete stop the operator can push the pin into one of the holes thus locking the carriage in place. Caution: Never attempt to engage the pin into a hole while the carriage is moving even slightly! This device is not a brake.
   2.2 Each pin is fitted with a visual indicator. When the pin is in the unlocked position the light green color is visible. When in the locked position, the light green indicator is not visible.

RECOMMENDED LOADING INSTRUCTIONS:
- Do not fully load one side of double-entry shelving without counterbalance weight on the other side.
- Begin loading at the lowest shelf.
- At no time should the weight differential from one side to the other exceed 50 percent.
General Maintenance

1. Adjusting chain tension:
   1.1 Use a 3/16” allen wrench to adjust the chain tension. Insert the wrench, push it in to compress the spring and turn the idler sprocket in a direction away from the lower driven sprocket (See Illustration 2). Once pressure is released from the spring the idler sprocket will lock into place and maintain chain tension.
   1.2 Make absolutely certain that the chain is engaged with the swinging idler sprocket and the sprocket attached to the upper shaft! (See Illustration 2).
   1.3 Fasten the mechanical assist hub and spokes to the upper sprocket block shaft end (See Illustration 1).
   1.4 Snap the hub cover into place (See Illustration 1).

   **Note:** As of 05-04 a single piece plastic 3 spoke control handle replaced all the metal type. This change does not affect the installation procedure.
SPACESAVER INSTALLATION INSTRUCTIONS
NEW M.A. HANDLE

I) Mounting Hardware
① (3) 1/4 - 20 x 1/2" large socket hd. screws with locking patch.
② (3) 1/8" thick x 1/2" diameter "hardened" flat washer.

It is important that the hardened 1/8" thick washer that Spacesaver has provided be used when installing the new handle. It will help insure the proper preload in the screw, which will prevent the screw from loosening.

II) Hub Plug
Firmly press the plug into the hub after you have installed the fasteners.

Plug Tabs should hold the plug firmly in place, unless they have been accidently bent. Alternately, if you are having trouble installing the plug, inspect the tabs.

To Remove Plug: Slide a small screw driver under the plug at the notch in the hub and pry it off.
Illustration 2

ALWAYS ROTATE TENSION ARM AWAY FROM SPROCKET MOUNTED IN CARRIAGE, SO THAT THE CHAIN DOES NOT RUB AGAINST THE BEARING AXIS, THAT THE TENSION ARM ROTATES ABOUT!

WHEN SETTING CHAIN TENSION, MAKE SURE THE CHAIN REMAINS ENGAGED WITH THE IDLER SPROCKET AS YOU GO THRU THE PROCESS OF:

A. SETTING THE PANEL IN PLACE  
B. PUSHING IN THE ADJUSTMENT SCREW  
C. ROTATING THE TENSION ARM ABOUT THE SCREWS AXIS.

IF THE CHAIN SLIPS OFF THE SPROCKET DURING THIS PROCESS, IT WILL RIDE ON THE PIN THAT THE IDLER SPROCKET SPINS ON, GIVING THE FALSE IMPRESSION THAT EVERYTHING IS ENGAGED ADJUSTED CORRECTLY.