



St Mary's
University
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Safe Manual Handling Working Procedures for offices,
general tasks and laboratories.

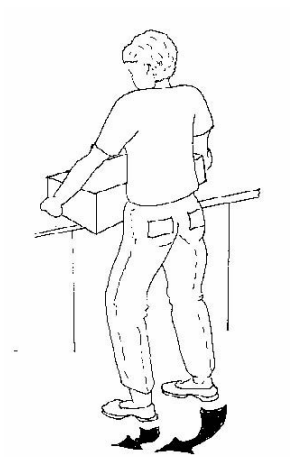
HSPG 11a
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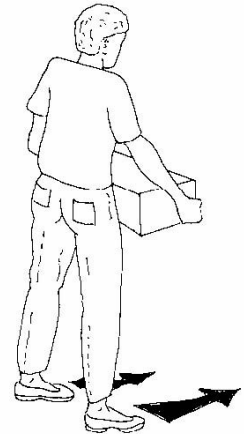
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Small light loads (one person lift)

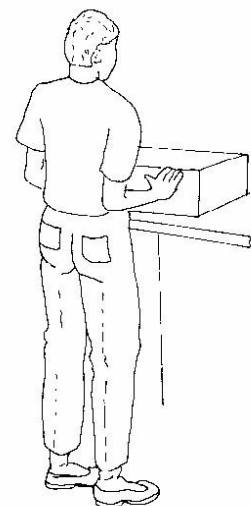
- ◆ Stand face on to the bench
- ◆ One foot slightly in front of the other
- ◆ Test the weight by lifting slightly at one edge
- ◆ Grasp at opposite diagonals
- ◆ Move the load towards the body



- ◆ Turn the body by moving the back foot and then the front foot until pointing in the direction of travel.
- ◆ Move off

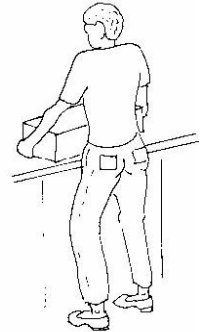


- ◆ Transfer the load to a bench or trolley.
- ◆ Flex the knees, not the back, when lifting and lowering.
- ◆ **Do not lift and twist**

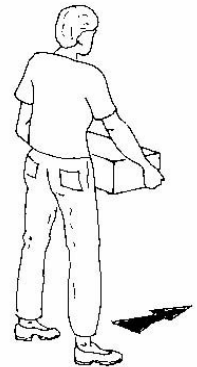


Small moderately heavy loads (one person lift)

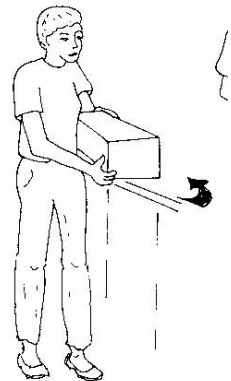
- ◆ Disconnect any leads or pipes.
- ◆ Stand face on to the bench with feet astride and one foot slightly in front of the other and the knees slightly flexed.
- ◆ Test the weight by lifting slightly at one edge.
- ◆ Grasp the underside edges at opposite diagonals.
- ◆ Move the instrument towards the edge of the bench.
- ◆ Move the legs back slightly with the feet still astride.
- ◆ Turn one edge of the load so that it protrudes slightly from the bench.



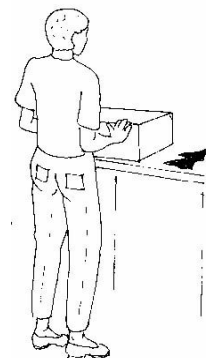
- ◆ Pull towards the body grasping the load on opposite diagonals.
- ◆ Readjust the feet position so still astride but at an angle to the bench.
- ◆ With the trunk facing the load, lift or slide the load along the bench.
- ◆ Readjust feet position so pointing in the direction of travel and then move off.



- ◆ **When putting back on to a bench or trolley**
- ◆ Don't put straight on but put on a slight angle.
- ◆ Keeping close to the body, push the load around into position.
- ◆ The body position should be at an angle to the bench with the inside foot leading as lowering the load.

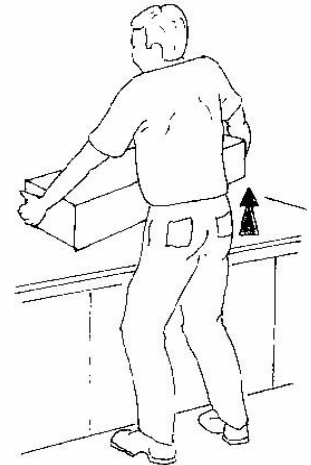


- ◆ When the load is lowered, readjust so that both feet are facing the bench before pushing.

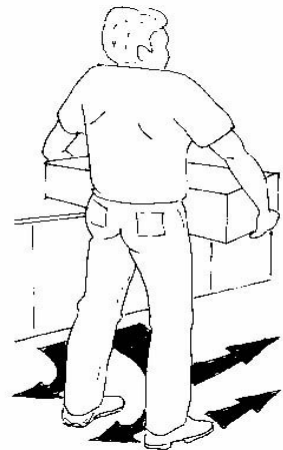


Bulky light loads (one person lift)

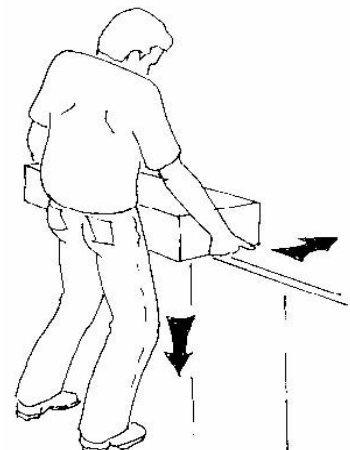
- ◆ Stand on to the load with knees slightly bent and one foot slightly in front of the other
- ◆ Test the weight by lifting slightly at one edge
- ◆ Grasp either end for a wide load or opposite diagonals for a thin high load.
- ◆ Lift to clear to a comfortable height.



- ◆ Step back so that the feet are astride with one foot slightly in front of the other.
- ◆ Turn the body by moving the back foot and then the front foot until pointing in the direction of travel.
- ◆ Move off.

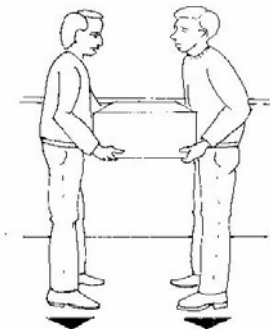


- ◆ Position the load where required.
- ◆ Remember to flex the knees, not the back, whilst lowering the load.
- ◆ Adopt the same procedure if placing the load on a trolley: where fitted, ensure wheel brakes are locked on the trolley.
- ◆ Avoid twisting and turning.

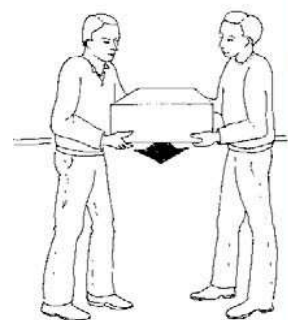


Heavy / moderately heavy loads (two person lift)

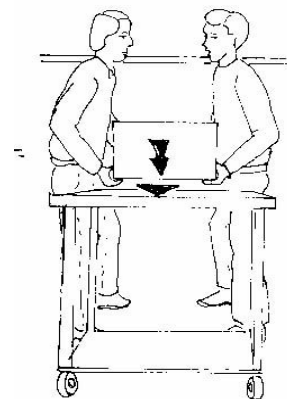
- ◆ Slide the load to the centre of the bench.
- ◆ Stand side on the bench with the inside foot slightly forward.
- ◆ Reach over and slide the load, from one edge, then the other, until it is at the front of the bench.
- ◆ Slide the load forward until the front edge of the load slightly overhangs the bench.
- ◆ Grip the load at each corner.



- ◆ Pull towards the body grasping the load on opposite diagonals.
- ◆ Readjust the feet position so still astride but at an angle to the bench.
- ◆ With the trunk facing the load, lift or slide the load along the bench.
- ◆ Readjust feet position so pointing in the direction of travel and then move off.



- ◆ **When putting back on to a bench or trolley.**
- ◆ One person to synchronise the lift by counting 1, 2, 3, Lift.
- ◆ Lift the load and transfer it to the centre of the body allowing the weight to be transferred from the inside leg
- ◆ If placing the load on a trolley, ensure the trolley wheels are locked.
- ◆ Move the feet sideways and shift the weight to the outside leg.
- ◆ One person to synchronise the lift by counting to three.
- ◆ Transfer to the bench or trolley directly or by putting the front edge of the load down first and pushing the load onto the surface.



Do not swing, however slowly, through the central position as this puts undue strain on the back.

If moving to another location move the feet slowly and coordinate the movement with your lifting partner

Don't lift directly from the bench position as this puts undue strain on the inside leg and back.

Minor variations may be necessary depending on trolley design or whether it is at or below bench height. Wherever possible trolleys that are the same height as the bench should be used so the load can be slid rather than lifted from bench to trolley. This places considerably less strain on the back.

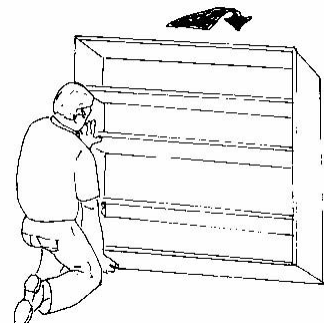
Moving very large items (two person lift)

eg. Refrigerators, filing cabinets, drying cabinets.

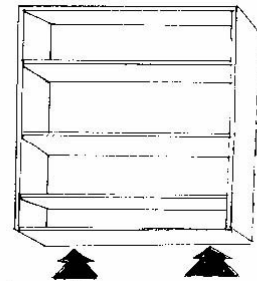
- ◆ Empty the cabinet and remove any moveable trays, shelves or drawers.
- ◆ Move slightly forwards away from the wall.
- ◆ The other operator then moves the other edge out.
- ◆ Where access is difficult it may be necessary to pull out from the front on one or both sides.
- ◆ Do this from a crouched position, because it is awkward it is important to take your time.



- ◆ When the unit is out of its normal location crouch with one foot slightly forward of the other.
- ◆ Push the load to raise it slightly at the front using the hand on the same side as the forward foot so the stress is on the outside of the body.
- ◆ Use the other hand to grasp the load from underneath and continue to raise it slightly.

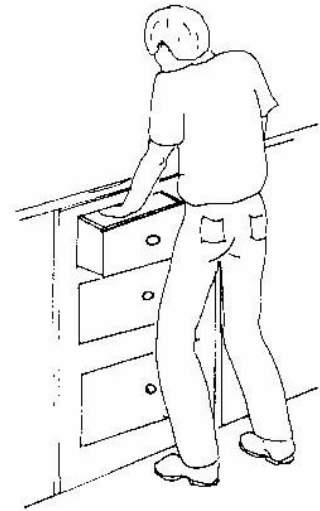


- ◆ The second operator should then position the forks of a sack trolley in the gap, position the sack trolley in the centre of the load.
- ◆ Allow the load to drop back gently onto the sack trolley while the second operator has a foot on the axle of the trolley.
- ◆ Gently ease back the load while the second operator still has a foot on the axle until the load is balanced.
- ◆ The first operator should then assist in pushing off the load and ensuring the load is stable.
- ◆ Secure the load to the trolley.

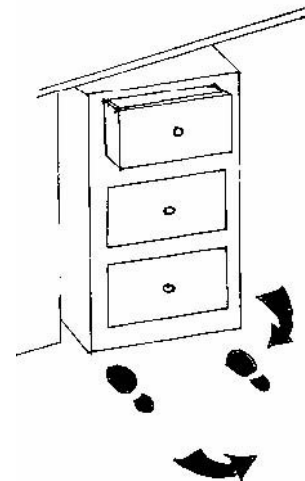


Moving under-bench cupboards

- ◆ Face on to the cupboard with knees slightly flexed and one foot in front of the other.
- ◆ Open the top drawer and insert the hands palm upwards.
- ◆ Grasp the front edge of the cupboard and pull one edge outwards (towards the back foot).

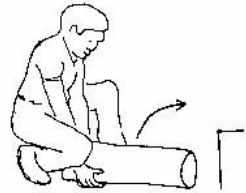


- ◆ Move the other foot back and repeat the process with the other edge.
- ◆ Carry on repeating this process with alternate sides gradually easing the cabinet out of its position until clear of the bench.
- ◆ With the trunk facing the load, lift or slide the load along the bench.
- ◆ Readjust feet position with each pull.
- ◆ When clear of the bench the cabinet may then be slid onto a sack trolley.



Long narrow loads (one person lift)

- ◆ Place a strong box or low platform at the far end of the load.
- ◆ Crouch with one foot in front of the other and grasp the load at the near end.
- ◆ Raise the load to a vertical position.



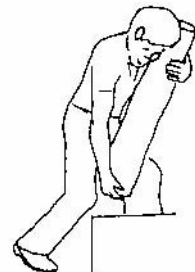
- ◆ Readjust your grip using the near hand to support the load approximately three quarters the way up its height.



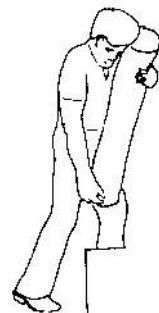
- ◆ Using the other hand, lift the load from underneath and lift it on to the platform.



- ◆ Readjust your stance.
- ◆ Keeping the back straight, and knees flexed lift the load to a vertical position.
- ◆ Lift with your legs, not your back.



- ◆ Adjust your body position to an upright stance holding the load as close to your body as possible.
- ◆ Move off.
- ◆ For replacing the load repeat the above steps in the opposite order.



Feed sacks (one person lift)

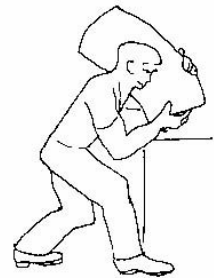
- ◆ A lifting platform, a little less than waist height is required.
- ◆ Crouch with one foot in front of the other and grasp the sack from underneath and towards the top.



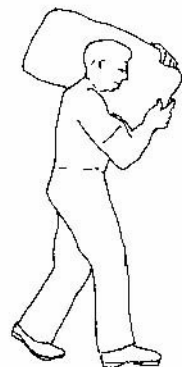
- ◆ Lift the sack onto the platform keeping the back straight and using the legs for the lift.



- ◆ Crouch slightly in front of the platform with the back straight and one foot in front of the other.
- ◆ Place the hand by the front foot under the load and the other hand approximately one quarter of the way up the sack.
- ◆ Swing the sack on to your shoulder.

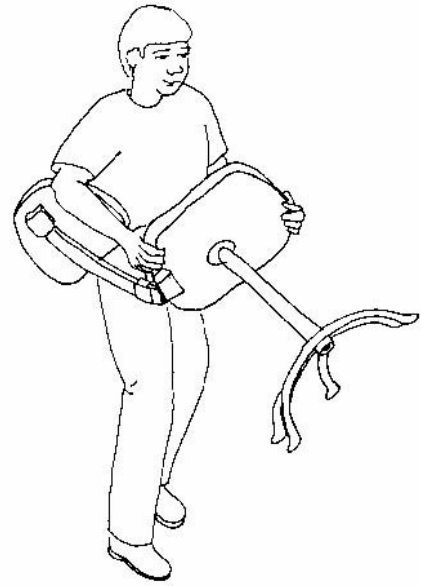


- ◆ Stand up using your legs for power and keeping your back straight (do not twist your trunk).
- ◆ Adjust the load so that its centre of gravity is comfortably over your shoulder allowing you to balance the load with minimal effort from the arms.
- ◆ Move off.



Awkward loads e.g. 5 leg chairs (one person lift)

- ◆ Flex the knees slightly.
- ◆ Grasp the back rest and the front edge of the seat, or the seat base with both hands using the elbow against the back rest for support during movement.
- ◆ Lift using the legs for thrust.
- ◆ Rest against the near hip so that the chair base is pointing away from you.
- ◆ Move off.
- ◆ When lowering, do so gently and bend the knees not the back.



Gas cylinders (one person)

Gas cylinders are designed to withstand high pressure, consequently they are extremely heavy and are always unstable when un-supported.

Transport of gas cylinders is probably the most potentially dangerous of all routine laboratory manual handling tasks.

Cylinder must always be transported in a purpose designed trolley.

Never attempt to move a cylinder with a neck higher than your shoulder.

Undergraduate / postgraduate students and trainee technicians must never transport gas cylinders or refit regulators unless under the direct supervision of an experienced person until such time as a senior technician agrees that they are competent.

Steel toe capped shoes and industrial quality gloves should be worn when moving large numbers of cylinders, eg. when accepting a delivery or during an empty collection from a bulk store.

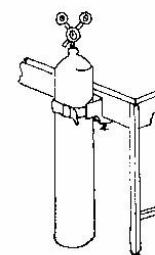
- ◆ Undo the securing bars on the trolley and slide place it near the cylinder rack.
- ◆ Unhook the chain from the rack and place the palm of your hand on top of the cylinder neck.
- ◆ Tilt the cylinder slightly forward so it rests on the rim of the base and use the other hand to rotate the cylinder “milk churning” it from the rack to the trolley.



- ◆ Fasten the securing bars on the trolley.
- ◆ Place one foot on the axle and tilt the trolley back so it balances comfortably on the wheels.
- ◆ Move off and set the trolley down in front of the wall rack or bench clamp in the laboratory.
- ◆ Remove the cylinder from the trolley, milk churning it into its new position.



- ◆ Make sure that the cylinder is secured to the wall rack or bench clamp in the laboratory.
- ◆ **Never stand a cylinder – even a small one – on its base un-supported.**
- ◆ **Never transport cylinders with regulators or equipment attached.**



When replacing regulators it is important that the screws are not over tightened, this can strain the screw threads resulting in leaks.

After replacing a regulator it is important to leak test the screw threads with soap solution or a proprietary leak testing spray. This is essential where flammable gases, oxygen, nitrous oxide or toxic gases such as chlorine are involved.

Flammable gas cylinders may only be used in laboratories with an outside window.

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