

WISH Programme



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Thailand

Work Improvement for Safe Home



Tsuyoshi Kawakami
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*Action manual for improving safety, health
and working conditions of home workers*

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and working conditions of home workers

Tsuyoshi Kawakami Sara Arphorn Yuka Ujita

International Labour Office

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Tsuyoshi Kawakami, Sara Arphorn, Yuka Ujita
*Work Improvement for Safe Home: Action Manual for Improving
Safety, Health and Working Conditions of Homeworkers*
Bangkok, International Labour Office, 2006

92-2-119080-3 & 978-92-2-119080-6 (print)
92-2-119081-1 & 978-92-2-119081-3 (web pdf)

Also available in Khmer: *Work Improvement for Safe Home: Action Manual for Improving Safety, Health and Working Conditions of Homeworkers*, 92-2-819080-9 & 978-92-2-819080-9 (print) and 92-2-819081-7 & 978-92-2-819081-6 (web pdf), Phnom Penh, 2006

And in Mongolian: *Work Improvement for Safe Home: Action Manual for Improving Safety, Health and Working Conditions of Homeworkers*, 92-2-819259-3 & 978-92-2-819259-9 (print) and 92-2-819260-7 & 978-92-2-819260-5 (web pdf), Ulaanbaatar, 2006.

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This publication can be obtained at the following address:

International Labour Organization, Subregional Office for East Asia
United Nations Building
Rajdamnern Nok Avenue
Bangkok 10200, Thailand
Email SRO-BKK@ilo.org

This publication is also available online at the ILO Informal Economy Resource Database:
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PREFACE

Improving work conditions among home workers in the informal economy is an important component of the ILO agenda to extend decent work to all workers. In many countries, people get their job and income opportunities from a range of home manufacturing operation such as clothes, shoes, furniture, handcrafts, or foods. Although machines, chemicals and other production materials are brought into home workplaces, home workers have very little access to safety and health protection. Practical safety and health improvement measures that can work in the real situation of home workers are acutely needed.

The WISH (Work Improvement for Safe Home) action manual responds to this immediate need of home workers and provides them with practical, easy-to-implement ideas to improve their safety, health and working conditions. These improvements will also contribute to higher productivity and efficiency of their work and promote active participation and cooperation of home workers in the same workplace or in the same community. The manual reflects the practical experiences in the home worker training in Cambodia, Mongolia, and Thailand carried out within the framework of the ILO's Informal Economy, Poverty and Employment Project with the financial support from the Government of the United Kingdom. The participating home workers have implemented many low-cost improvements for safety, health and productivity by using available local resources.

Existing participatory, action-oriented training manuals and programmes for safety, health and working conditions have given significant insights into the development of the WISH manual. Two ILO publications, Higher Productivity and Better Place to Work, known as the WISE (Work Improvement in Small Enterprises) manual, and Ergonomic Checkpoints provided an important technical base. The WIND (Work Improvement in Neighbourhood Development) manual for farmers developed by the Centre for Occupational Health and Environment, Cantho, Vietnam, and the Institute for Science of Labour, Kawasaki, Japan, and the POSITIVE (Participation-Oriented Safety Improvements by Trade Union Initiative) manual developed by Japan International Labour Foundation showed us practical ways to design training programmes to meet the immediate needs of local people.

The technical team conducted many WISH training courses, leading to the finalization of this manual. They prepared the text, arranged photos, and supervised the development of the illustrations. The team consists of Dr. Tsuyoshi Kawakami, Senior Safety and Health Specialist of the ILO Subregional Office for East Asia; Dr. Sara Arphorn, Assistant Professor of Department of Occupational Health and Safety, Mahidol University Faculty of Public Health, Bangkok, Thailand; and Dr. Yuka Ujita, Technical Officer on Safety and Health of the ILO Subregional Office for East Asia. We are grateful to Ms. Sandra Yu, Chief Technical Advisor of the Informal Economy, Poverty and Employment (IEPE) Project, and to Ms. Ginette Forgues, Senior Specialist on Local Strategies for Decent Work of the ILO Subregional Office for East Asia, for valuable technical advice and supervision. Mr. William Salter, Senior Advisor, Conditions of Work and Employment Programme and Ms. Michele Nahmias, Senior Specialist, SafeWork, ILO Geneva, gave us useful technical comments. Ms. Sudthida Krungkrai Wongse of the National Institute for the Improvement of Working Conditions and Environment (NICE) was an active contributor to the implementation and development of WISH. A special acknowledgement must go to Mr. Tun Sophorn, Ms. Shurenchimeg Zokhiolt, and Ms. Rakawin Leechanavanichpan, National Project Coordinators for the IEPE Project, for their devotion as colleagues working closely with local home workers in Cambodia, Mongolia, and Thailand, respectively. Ms. Sutida Srinopnikom, Programme Assistant for Thailand, provided valuable logistical and programming support in many aspects of this endeavour from the beginning. Ms. Paveena Eakthanakit, Ms. Amittada Boonmontira, Ms. Thanida Vora-urai and Ms. Sayamon Saiyot provided excellent secretarial support. Mr. Pwan Keskarn and Mr. Peerawat Asawapichayachot developed all the clear illustrations.

I sincerely hope that the manual will help many home workers improve safety, health and working conditions.

Christine Evans-Klock
Director
ILO Subregional Office for East Asia
Bangkok, Thailand, July 2006



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Good example photos

Home workers in Cambodia - Garment and basket making -



Working at elbow height



Space-saving multi-level racks



Bamboo ceiling



Necessary materials placed within easy reach



Safe drinking water



Parking area



Rubbish bin

Good example photos

Home workers in Ulaan Baatar, Mongolia - Furniture manufacturing -



Storage area



Wheeled device to carry materials



Multi-level rack



(Before improvement)
Safer chemical storage



(After improvement)



Home for tools



(Before improvement)
First aid kit



(After improvement)



Resting corner

Good example photos

Home worker community in Bangkok, Thailand - Bronze manufacturing -



Checklist exercise



Group work to discuss improvements

Improvement examples



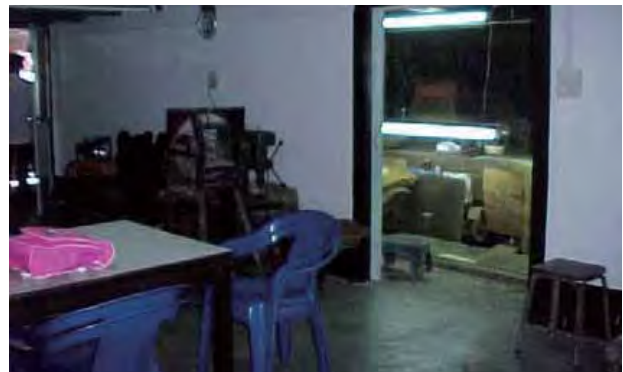
Space-saving multi-level racks



Finger protection



Carts to carry heavy materials



Wall to protect living quarters from work areas

ACTION CHECKLIST

How to use the checklist

1. Read through the checklist and spend a few minutes walking around the work area before starting to check.
2. Read each item carefully. Look for a way to apply the measure. If necessary ask the home workers questions. If the measure has already been applied or it is not needed, mark NO under “Do you propose action?” If you think the measure is worthwhile, mark YES. Use the space under REMARKS to put a description of your suggestion or describe exiting good examples which you have found.
3. After you have gone through the whole items, look again at the items you have marked YES. Choose a few where the benefits seem likely to be the most important. Mark PRIORITY for these items.
4. Before finishing, make sure that for each item you have marked NO or YES, and that for some items marked YES you have marked PRIORITY.



Materials Storage and Handling

1. Clear and mark transportways.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



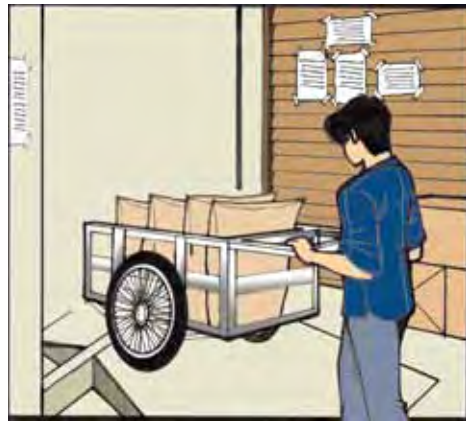
2. Use carts, hand-trucks, rollers and other wheeled devices when moving materials.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



3. Provide multi-level shelves or storage racks near the work area for tools, raw materials, parts and products.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



4. Use specially designed pallets or containers to hold and move materials, semi-finished products and products.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



5. Provide good grips or holding points for all containers and packages.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



Machine Safety

6. Attach proper guards to dangerous moving parts of machines and power transmission equipment.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



7. Attach easy-to-read labels and signs in order to avoid mistakes.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



8. Make sure machines are well maintained and have no broken or unstable parts.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



9. *Make emergency controls clearly visible and easy to reach.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



10. *Ensure safe wiring connectors for supplying electricity to equipment and lights.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



Work-stations

11. *Adjust working height for each worker at elbow level or slightly lower than elbow level.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



12. *Put frequently used tools, controls and materials within easy reach of workers.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



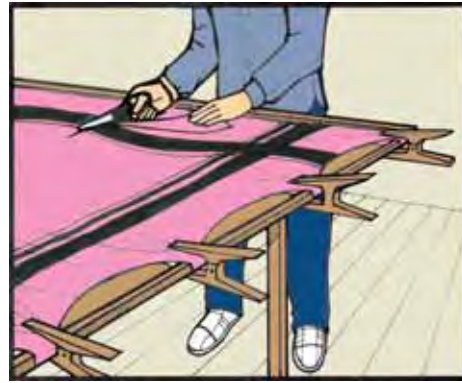
13. Use jigs, clamps, vices or other fixtures to hold items while work is done.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



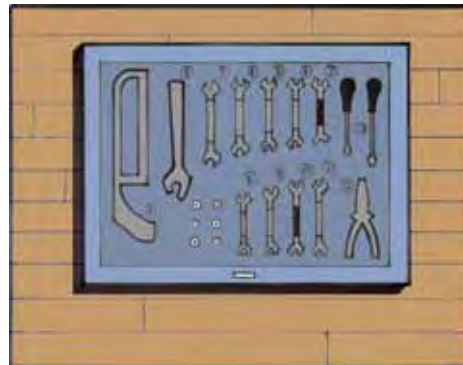
14. Provide a conveniently placed home for each tool.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



Physical environment

15. Add more daylight and keep skylights and windows clean.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



16. Provide general artificial lighting and local task-lights adequate for the type of work done.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



17. Isolate the sources of dust, hazardous chemicals, noise or heat out of the workplace.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



18. Make sure all the containers of hazardous chemicals have labels.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



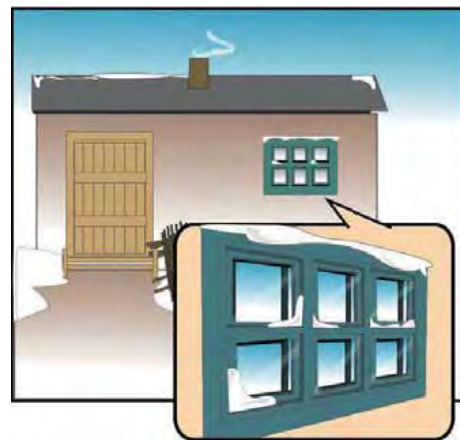
19. Protect your workplace from the cold.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



20. Improve the heat protection of the building by backing walls or roofs with insulating materials.

Do you propose action ?

No Yes Priority

Remarks:.....

.....



21. *Increase natural ventilation by having more openings, windows or open doorways.*

Do you propose action ?
 No Yes Priority

Remarks:.....



22. *Provide adequate clothes and personal protective equipment such as glasses, shoes, and gloves.*

Do you propose action ?
 No Yes Priority

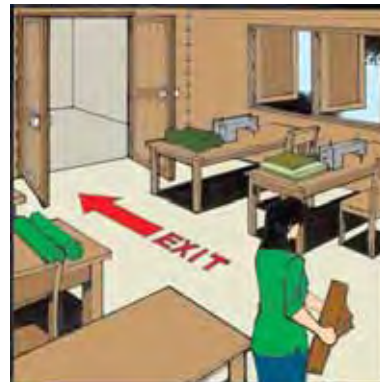
Remarks:.....



23. *Provide at least two unobstructed exits from rooms and enough fire extinguishers.*

Do you propose action ?
 No Yes Priority

Remarks:.....



Welfare Facilities and Work Organization

24. *Provide an adequate supply of safe drinking water in all workplaces.*

Do you propose action ?
 No Yes Priority

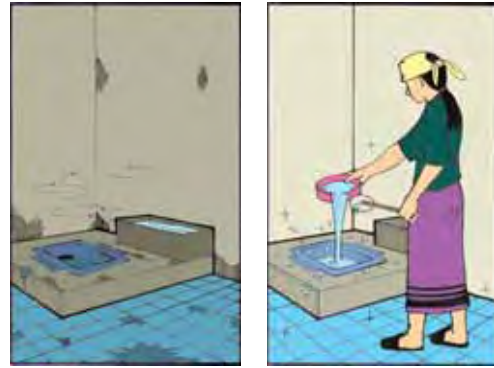
Remarks:.....



25. Provide regularly cleaned toilets and washing facilities with soap close to the work area.

Do you propose action ?
 No Yes Priority

Remarks:.....



26. Provide resting corners and a separate hygienic place for eating meals.

Do you propose action ?
 No Yes Priority

Remarks:.....



27. Provide first-aid equipment and train a qualified first-aider.

Do you propose action ?
 No Yes Priority

Remarks:.....



28. Adjust workplaces to meet the needs of pregnant women and workers with disabilities.

Do you propose action ?
 No Yes Priority

Remarks:.....



29. *Combine tasks so that each worker can perform varied and interesting work.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



30. *Rearrange layout and flow of work to reduce unnecessary movements of workers.*

Do you propose action ?

No Yes Priority

Remarks:.....

.....



Work Improvement for Safe Home

Chapter 1

Materials storage and handling

(Checkpoints 1-5)



CHECKPOINT 1

Clear and mark transport ways.

BENEFITS FOR HOME WORKERS

Home workplaces need clear transport ways. Although home workplaces often have space problems, you can make convenient transport ways by simply removing unnecessary materials as much as possible. Your products and materials may be heavy, varied in shape and difficult to handle. Clear and good passageways can help home workers handle different materials easily, prevent fatigue and reduce work time.

At home, wider and well-maintained aisles and corridors contribute to the smooth flow of house-keeping work and help prevent accidents. Narrow or unsafe transport ways increase your accident possibilities. You may be injured. In addition, you may lose your precious products and materials. Your expensive machines and tools might be damaged, too.

HOW TO IMPROVE

1. Look at your workplaces and find the possible space to secure your transport ways. Consider your workflow and minimize the distance for transport of your products and materials.
2. Remove materials from the transport ways. Store them in a space-saving multilevel rack, for example.
3. Place storage shelves and rubbish bins to ensure proper storage and waste disposal. Store nothing on these transport ways.

WAY TO PROMOTE COOPERATION

Invite ideas from your workmates in your home workplace on how to make and maintain transport ways. Don't try to be perfect, but start with small, simple improvements. For example, clean the entrance area of your workplaces as the first step. Home workers working together will share the clear benefits of faster and safer transportation. Formulate a culture of cooperation among home workers. Make improvements in a step-wise manner, and maintain and improve the cleared passageways continuously.

SOME MORE HINTS

- If space is available, wider passageways allowing two-way movement of people will increase safety and smooth work flow.
- Passageways should be even and smooth. Where appropriate, pave them with wood, bricks or cover them with cement. Make sure work items, tools, raw materials, scrap, etc. do not lie in the passageways. Avoid slippery walking surfaces.
- If there is a height gap in the passageway, provide a ramp with a small inclination.
- If there is an electrical wire across the passageway, cover it to prevent tripping accidents.

POINTS TO REMEMBER

Cleared passageways can make the transportation of home work products easy and prevent injuries and damage.

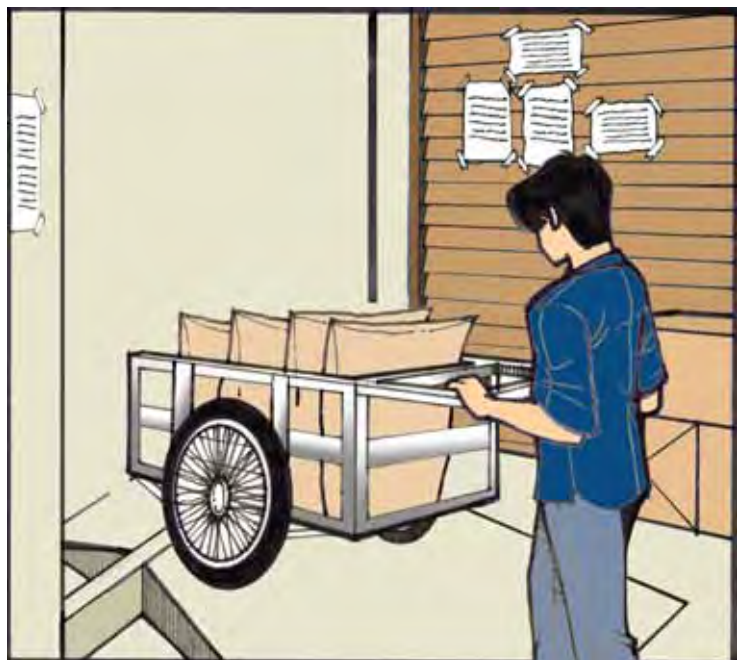


Figure 1: Keep a wide and clear passageway for two-way movement of people.

Figure 2: Clear passageway for smooth transportation of materials or products.



Figure 3: Passageway leading to the workplace needs to be smooth.



CHECKPOINT 2

Use carts, hand-trucks, rollers and other wheeled devices when moving materials.

BENEFITS FOR HOME WORKERS

Home workers need to move raw materials and products everyday between their workplaces and storage or entrance areas. By using carts, hand-trucks or mobile racks, you can move the materials easily and safely. The probability of product damage and accidents will be much lower.

Carts, hand trucks or vehicles allow you to carry more materials at one time. The number of your trips will decrease. You can save your work time and produce more products efficiently and safely.

HOW TO IMPROVE

1. Design and make appropriate carts fitted to your work needs. Carts can be designed to carry different shaped materials such as bottles, clothes, sacks, etc.
2. Carts or hand trucks need firm handles and appropriate grips for easy operation.
3. Bigger-wheeled carts can carry heavier materials and overcome uneven or bumpy transport ways.
4. You may attach wheels to existing material racks for convenience.

WAY TO PROMOTE COOPERATION

Walk around your workplace with fresh eyes. Discuss with your work friends how they carry loads. Everybody must have some experience in using carts and vehicles and have practical ideas for the carts suited to their workplace needs. There might already be good examples of self-made carts or hand trucks in your neighbouring workplaces. Visit them to learn from their ideas.

SOME MORE HINTS

- Attach appropriate side-boards to carts or hand trucks to prevent products or materials from falling off while they are carried.
- Check the condition of your carts and hand trucks regularly and always keep them in good condition. Wobbling wheels or grips will increase accident risks.
- Simple maintenance activities will greatly increase your safety and work efficiency.
- Eliminate gaps and holes in the transport routes for easy use of push carts.

POINTS TO REMEMBER

Push carts and hand trucks are powerful devices to help increase your safety and efficiency.



Figure 4: Hand trolley lifter for arranging and moving.



Figure 5: Movable rack for storing and moving.

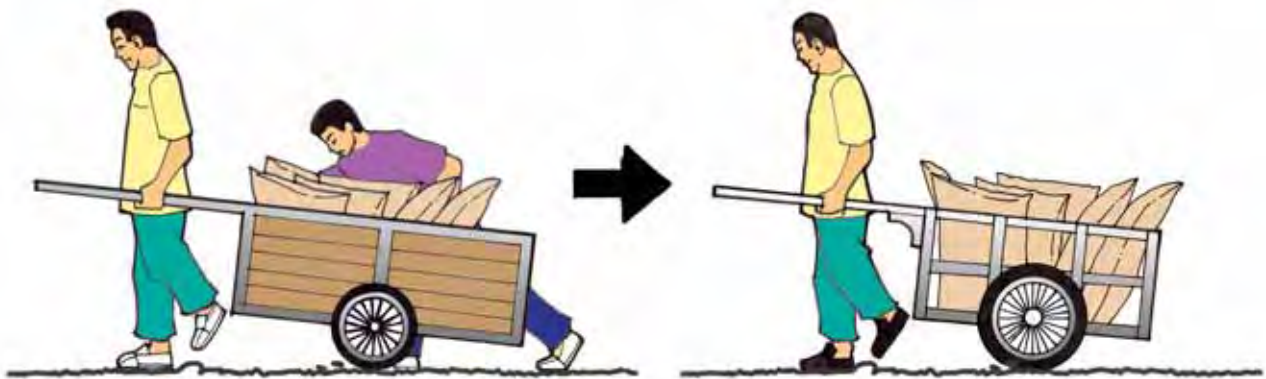


Figure 6: On rough roads, it is easier to push or pull hand-trucks with bigger wheels than small wheels.

CHECKPOINT 3

Provide multi-level shelves or racks near the work area for tools, raw materials, parts and products.

BENEFITS FOR HOME WORKERS

Most home workplaces have only limited space. Many home workers are concerned about the effective use of their work space. Multi-level shelves and racks give you workable solutions. You can even use the wall and overhead space to keep materials. This will make your floor space larger.

There is another advantage. By placing things on multi-level shelves, you can easily find necessary items at an appropriate height, and therefore save your time. For example, home workplaces use many tools. By keeping the tools in designated places, you can save precious time and energy when picking them up. Multi-level shelves and racks can also reduce the risk of accidents and fires.

HOW TO IMPROVE

1. Look at your workplace, and find an appropriate place to set multi-level shelves and racks. The place should be easy for home workers to see and access.
2. Use wall space wisely. Select multi-level shelves or racks whose sizes can be fitted to the available wall space.
3. To find things easily, put labels or draw shapes of different items or tools on the front end of shelves or containers to show where each item is kept. This saves your time.
4. Place heavy materials on the lower shelf and light ones on the upper shelves. Use materials strong enough to hold heavy items. It is better to place such shelves against the wall.
5. To keep small items in good order, put them into appropriate containers and place these containers on the multi-level shelves. The containers should be labeled.

WAY TO PROMOTE COOPERATION

Jointly find and make space for placing convenient multi-level shelves. Home workers can design the shelves together to meet their workplace needs. Some co-workers may have carpentry skills and can build multi-shelves using available resources at the workplace.

SOME MORE HINTS

- Place frequently used items at a level between your waist and shoulder.
- If convenient, attach wheels to racks and multi-level shelves. These arrangements are useful for things that many people use in different places, such as hand tools.

POINTS TO REMEMBER

Multi-level shelves and racks can solve your space problem and save your time.



Figure 7: Multi-level rack for storing materials, tools, and products.



Figure 8: Multi-compartment cabinet containing garment accessories.



Figure 9: Use carton boxes with labels for storing materials and products in designated areas.

CHECKPOINT 4

Use specifically designed pallets or containers to hold and move materials, semi-finished products and products.

BENEFITS FOR HOME WORKERS

Home workers handle many kinds of tools and raw materials. Many of them are small and easy to lose. Garment workers, for example, use threads, needles and buttons. Wood-processing workers need nails, screws and many hand tools such as screwdrivers and hammers. Pallets and containers help you keep and handle tools, devices and other small materials in good order.

By using pallets and containers, home workers can carry a number of the same items at one time and reduce the number of trips between their workstations and storage areas. These pallets and containers can be kept on space-saving, multi-level shelves. These low-cost, practical improvements make your work safe and productive.

HOW TO IMPROVE

1. Select and use appropriate size of pallets and containers. You can use available materials nearby, such as pallets. Used bottles or cans may serve your purpose.
2. Pallets and containers should be carefully designed for your purposes. For frequently used materials in your workstations, the openings of the pallets and containers should be wide enough. If the main purpose is to keep small materials in a storage area, you may use containers with narrower openings.
3. Put a label on each container to make searching easier.

WAY TO PROMOTE COOPERATION

By using pallets and containers, you can save your time and work space. Discuss with your co-workers what small items need pallets and containers and how you can make them together. Put labels together on the pallets and containers to avoid mistakes. Find convenient, easy-to-access places to keep the pallets and containers.

SOME MORE HINTS

- Use different colours on labels to make searching easier.
- Pallets can be stored in a cabinet. Attach wheels to make it movable. Several workers can use it conveniently.

POINTS TO REMEMBER

Pallets and containers of appropriate size help home workers to handle many small items conveniently.

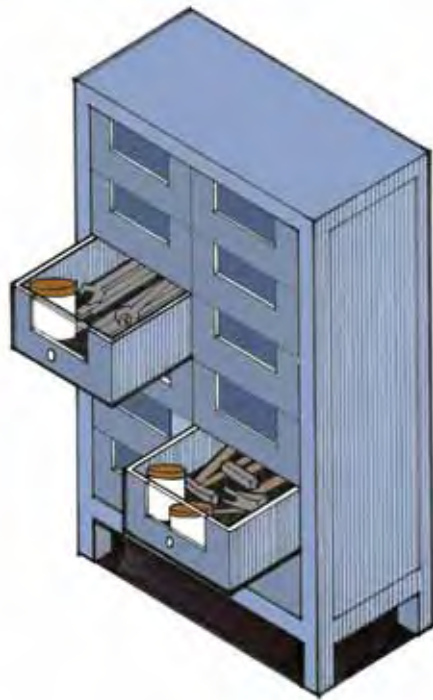


Figure 10: Well-designed and organized cabinet to save space for storing each tool and equipment.

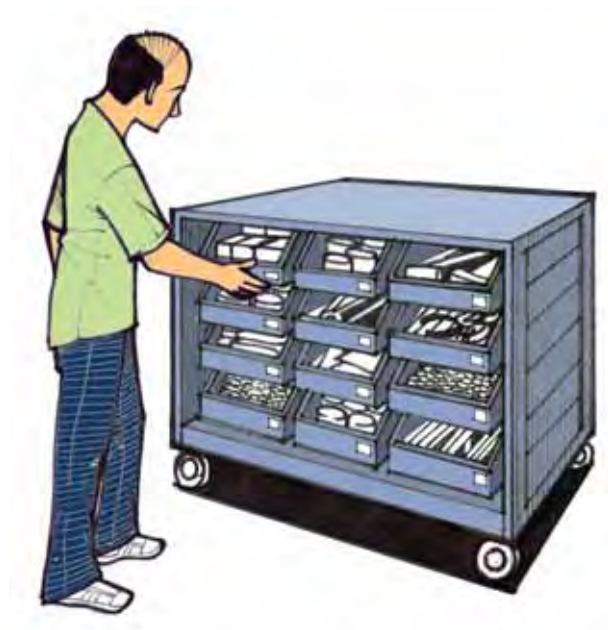


Figure 11: Movable cabinet with small pallets to store tools and materials for convenient use.



Figure 12: Pallets and containers with clear labels kept on multi-level shelves in good order.

CHECKPOINT 5

Provide good grips or holding points for all containers and packages.

BENEFITS FOR HOME WORKERS

Carrying heavy materials is strenuous and can be dangerous. You need good containers and packages for safe carrying. Attaching simple grips or holding points to your containers and packages makes your carrying work much easier and safer. You will be surprised that small changes make a big difference!

Attaching good grips and holding points has many positive effects. The grips help you handle the materials easily. Besides, you can ensure a clearer forward view while carrying your loads. Holding loads in front of you blocks your view and may cause an accident. A good hand grip can improve your work posture and prevent fatigue.

HOW TO IMPROVE

1. Attach grips or holding points to the containers and packages you are using. They should be strong enough and safe. Test them before using for your work.
2. When you newly purchase or introduce containers, packages, bags and baskets, find the ones which have proper grips or handles.
3. Set your own weight limit for the load to be carried. Divide the load evenly in both arms. Carrying two packages of 2.5 kg each is better than carrying one package of 5 kg.
4. Two or more persons should carry heavier materials. Promote workplace cooperation when carrying heavy materials.

WAY TO PROMOTE COOPERATION

Home workers manufacturing the same products can learn about good containers that have convenient grips and holding points. Adding grips or holding points can be done at low cost using available materials at the workplace. Metal wires or pieces of steel bars may be applied to make good grips. Encourage your co-workers to exchange such good ideas.

SOME MORE HINTS

- Wearing gloves or wrapping grips or handles with soft cloth may ease carrying of loads.
- Keep the wrist in a comfortable and natural position while holding grips. If necessary, enlarge the holes adjacent to the grips.

POINTS TO REMEMBER

Attaching good grips and holding points makes your load carrying much easier.



Figure 13: Holding points on a materials tray help workers carry materials safely and efficiently.



Figure 14: Carrying heavy items by using a container properly designed for each of the loads with good hand grips to handle easily.



Figure 15: Using a pannier with firm hand grips, two persons should carry heavy material.

Work Improvement for Safe Home

Chapter 2

Machine safety

(Checkpoints 6-10)



CHECKPOINT 6

Attach proper guards to dangerous moving parts of machines and power transmission equipment.

BENEFITS FOR HOME WORKERS

Home workers use machines in their narrow workplaces. Examples are sewing machines for garment manufacturing, punching machines in metal workshops, or cutting machines in the wood-working process. Injuries could occur from needles, gears, rollers or belts. You and your family members (often children) may become injured when they pass by the machine.

You can increase safety by making and attaching simple, hand-made guards to moving parts of machines. With these guards, you do not need to worry about the danger of machines and can concentrate on your work. You will experience productivity improvements, too.

HOW TO IMPROVE

1. Walk through your home workplace. Identify dangerous, moving parts and power transmission equipment on your machines which require appropriate guards.
2. Place guards and covers over these dangerous parts. Use available materials such as wood or steel pieces to make guards. Use sufficiently strong materials.
3. Ensure that machine guards are not obstacles for your work and will not decrease productivity.
4. Regularly check the attached guards. Repair them if they are wobbly.
5. Replace existing guards with stronger ones whenever you find better ways or materials.
6. You may need to see the operation of machines behind the guards. If so, use transparent materials such as plastics or metal nets to make the guards.

WAY TO PROMOTE COOPERATION

Visit other home workers and see how they use machine guards to increase safety and productivity. These guards are very important in narrow home workplaces to protect workers and their families from possible accidents caused by machines. Learn from their experiences to design effective machine guards and find available local materials to make such guards.

SOME MORE HINTS

- When you purchase a new machine and place it in your home workplace, secure sufficient space as a machine area to avoid workers' accidental contact.
- Keep the working surface of the machine free of unnecessary objects.
- When attaching machine guards, fix them tightly to the machines. Before operating the machine, carefully check each bolt and nut on the attached guards.

POINTS TO REMEMBER

Attaching guards to machines protects home workers and their families from accidents.



Figure 16: Attach proper guards to dangerous moving parts of machines such as exposed gears, chain drives and projecting shafts.

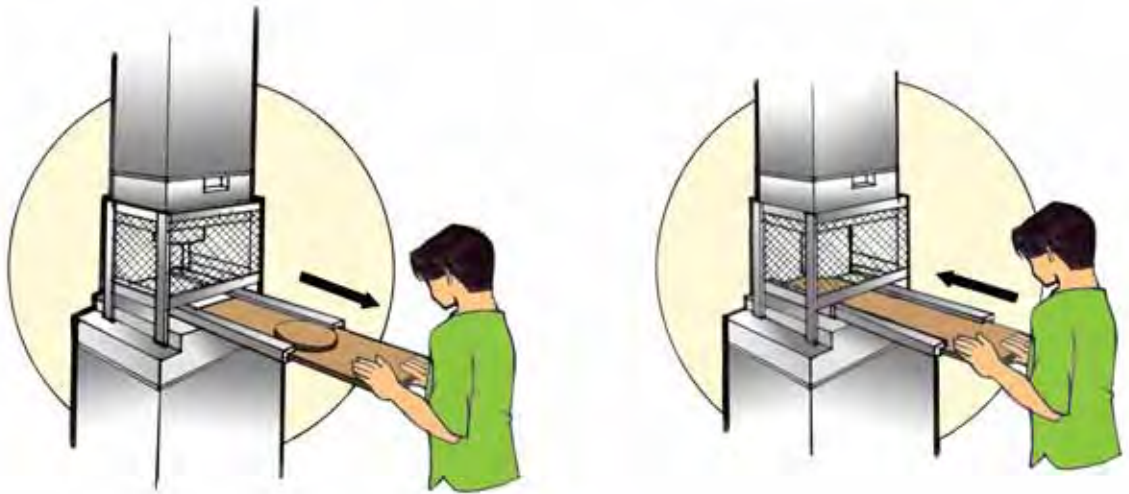


Figure 17: Use safety devices to prevent hand injuries.

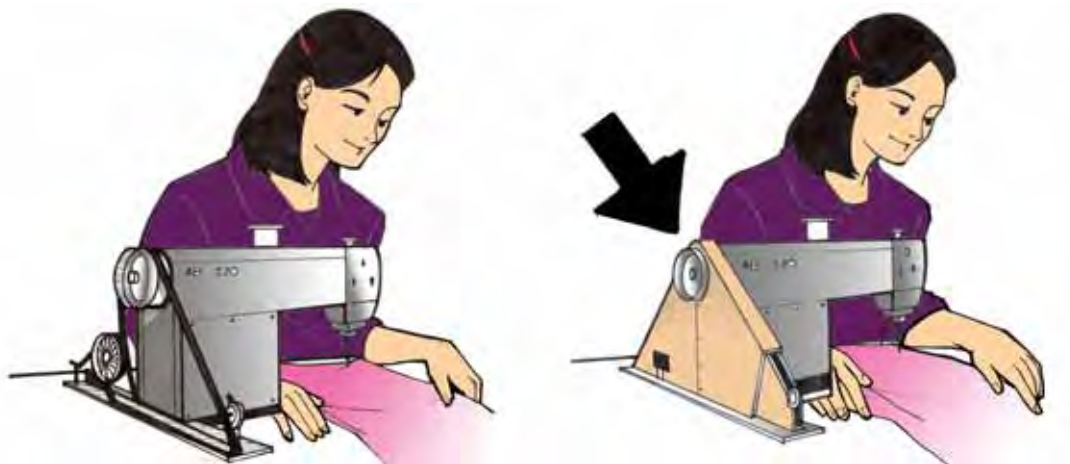


Figure 18: Attach covers to moving parts of machines. Design them not to be obstacles to your work.

CHECKPOINT 7

Attach easy-to-read labels and signs in order to avoid mistakes.

BENEFITS FOR HOME WORKERS

Home workers need clearly written labels and signs for machine operations or on electrical switch boards. Unclear, difficult-to-understand labels will lead you to make mistakes and may cause serious accidents. Your work efficiency will decrease, too.

Make and attach easy-to-read labels and signs on emergency stop switches and other necessary places. These labels and signs should be clearly visible, even by visitors and outsiders. They will be able to avoid danger and even stop machines in an emergency. The labels must be written in the local language.

HOW TO IMPROVE

1. Look around your home workplace and identify the places and items that need clear labels and signs. Instructions for safe use of machines, electricity or chemicals are priorities. Ask your co-workers for idea.
2. Emergency controls or switches on machines should be made clearly visible by using a bright colour. Place the controls and switches within easy reach of users.
3. All the labels and instructions should be written in the local language which all home workers in the same workplace can understand clearly.

WAY TO PROMOTE COOPERATION

Jointly design clear labels and signs to ensure safe use of machines and electricity. Use different colours and shapes. Ensure that all co-workers in your home workplaces understand the contents of the labels and instructions. Exchange ideas and experiences with other home workers.

SOME MORE HINTS

- Use big and clear characters for labels on controls and switches.
- Replace unclear labels or labels written in a foreign language with labels clearly written in the local language.
- When you use pictures, symbols and signs for instruction, show them to your co-workers to confirm that they clearly understand what you mean.

POINTS TO REMEMBER

Clear labels and signs will make your work easier, safer and more productive.



Figure 19: Make machine instructions clearly visible and attach easy-to-understand labels.

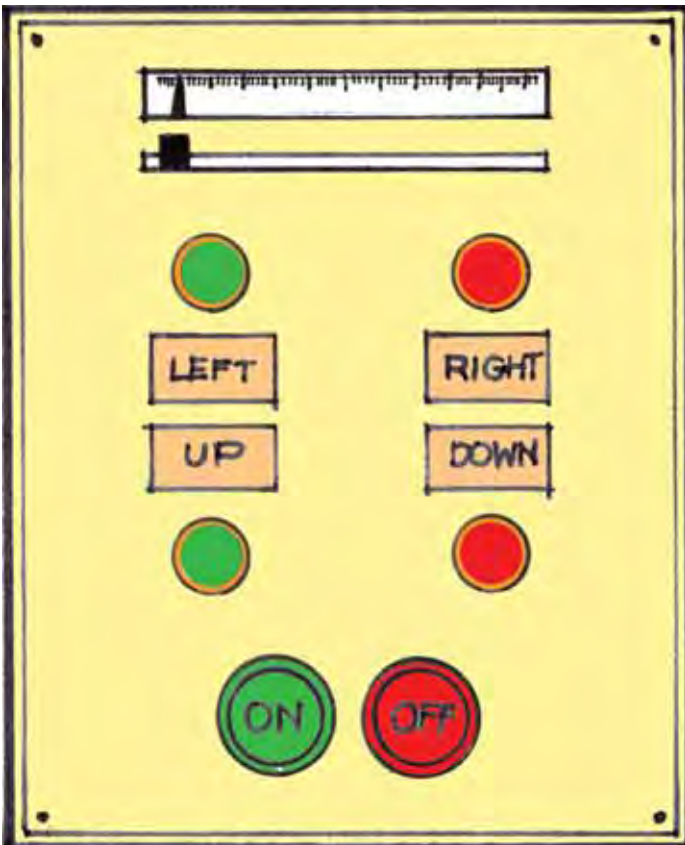


Figure 20: An electricity board with clearly visible controls, switches and displays. All the instructions should be written in the home workers' own language. Emergency stop switches should be large and must stand out.

CHECKPOINT 8

Make sure machines are well maintained and have no broken or unstable parts.

BENEFITS FOR HOME WORKERS

Every machine requires regular maintenance for high productivity and safety. Home workers spend a lot of money on purchasing machines and need to use them for a long time without problems. Broken or wobbling parts of the machines should be repaired immediately. Even if your machine seems to have no problem, through regular inspections and maintenance you can continue to enjoy high-level productivity and safety.

Home workers have to pay attention to safety when repairing and maintaining their machines. Many accidents with machines have happened during maintenance time. The accidental start of the machine while someone is repairing it is very dangerous. This can cause serious accidents. In addition to the machine switch-off, disconnect the electrical wire. Place a clear instruction, “DANGER, DO NOT OPERATE THE MACHINE !” and inform everyone.

HOW TO IMPROVE

1. Purchase a safe machine. This is a good way to use your precious money. Don't make your decision just because of a lower price. In the machine shop, carefully check guards, electrical wires, feeding parts, etc.
2. Set machine maintenance days at regular intervals. Consult qualified and experienced persons. Keep maintenance records.
3. Qualified/experienced persons should carry out machine maintenance.
4. While maintaining a machine, hang a big tag, “DANGER, DO NOT OPERATE THE MACHINE”. The machine must be switched off and the electricity must be disconnected, too.

WAY TO PROMOTE COOPERATION

It is very important to know and consult experienced and qualified persons about machine and electrical safety. Ask them to help with your machine maintenance programme and learn from their experiences. If you are qualified and experienced, help other home workers to maintain their production machines for safety and productivity.

SOME MORE HINTS

- Seek advice about machine safety from the machine shop where you bought your machine. You should be trained about basic machine and electricity safety issues.
- Obtain and read the machine instruction manual written in the local language to ensure safe maintenance. Place the manual near the machine for quick reference for everyone.
- Prepare a notebook for maintenance records and keep it near the machine for everyone's reference. Record the dates and the maintenance items you carried out.

POINTS TO REMEMBER

Regular machine maintenance is needed to ensure high productivity and safety.



Figure 21: Regular inspection and maintenance keeps your machine productive and safe.



Figure 22: While maintaining or repairing a machine, the machine must be switched off and the electricity disconnected. Hang a tag, "DANGER, DO NOT OPERATE THE MACHINE".



Figure 23: Machine parts, tools and equipment should be checked and repaired by qualified/experienced persons.



CHECKPOINT 9

Make the emergency controls clearly visible and easy to reach.

BENEFITS FOR HOME WORKERS

Home workers must know how to stop their machines in an emergency. Clearly visible emergency controls within easy reach of workers are the first requirement. Use an outstanding colour and symbols for the emergency controls. Everyone at the workplace will know where the emergency controls are.

Keep clear passageways to allow anyone to reach emergency controls easily and quickly. Don't place other materials near the emergency controls. This is particularly important in the home workplaces that have only limited space.

HOW TO IMPROVE

1. Place emergency controls or switches of machines within easy reach of operators.
2. Make the emergency controls and switches clearly visible and stand out. Separate them from other switches for easy distinction.
3. Your emergency controls or switches may be placed in the same area with other control buttons. If so, make the emergency control stand out and easy-to-see by using a red colour, a peculiar shape, or make it large.
4. Remove other materials from the emergency controls areas for quick operation.
5. Write instructions for emergency switches in the local language.

WAY TO PROMOTE COOPERATION

Home workers working in the same workplace can help each other to make the emergency controls and switches clear and visible. Prepare the instructions together written in the local language. Train all the co-workers in your workplace to reach the emergency controls smoothly and stop the machine.

SOME MORE HINTS

- The direction of switches and controls should follow common sense and not be confusing to home workers. For example, "On" should be upward, and "Off" downward, etc. Confusing switches and controls should be adjusted.
- Discuss and prepare a workplace emergency plan to rescue accident victims after stopping machines.

POINTS TO REMEMBER

Emergency controls should be clearly visible and easy-to-reach. This will save you, your family and your friends.

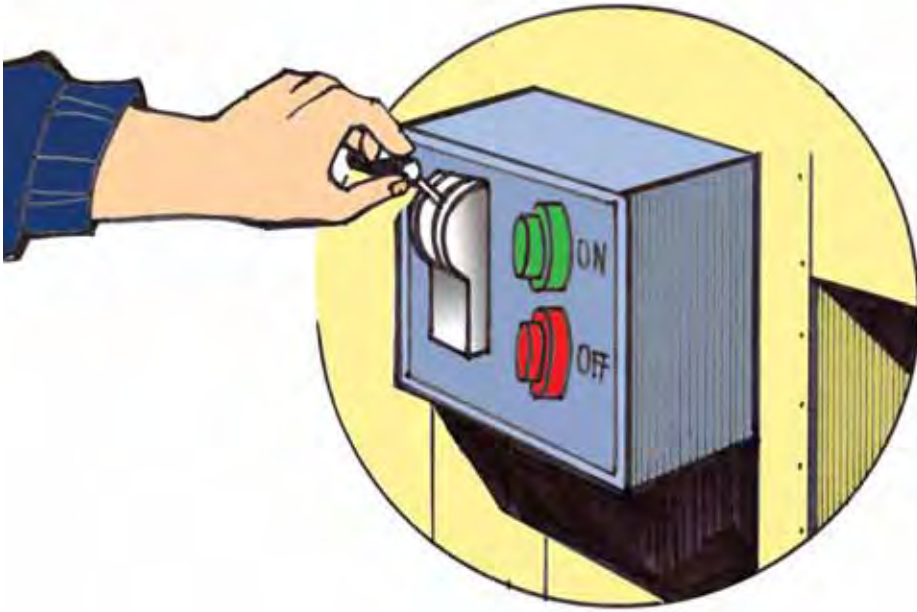


Figure 24: Place emergency controls or switches of machines within easy reach of users. Separate them from other switches.



Figure 25: An electricity board with visible controls, switches and displays; all are clearly marked.

CHECKPOINT 10

Ensure safe wiring connectors for supplying electricity to equipment and lights.

BENEFITS FOR HOME WORKERS

Electrical safety is very important for home workers. Home workplaces use and store many inflammable materials in a narrow area. An electrical short-circuit can quickly cause a big fire. The safe use of electricity is required to protect you, your family and friends.

Home workers should have the basic knowledge to ensure safe use of electricity. All electrical wires should be well-protected and sheathed. Pay attention to the junctions connecting electrical wires and machines. The junctions often cause electrical leakage. Electrical wires should not be located on the floor.

HOW TO IMPROVE

1. Look at how electricity comes to your workplace and is used. Observe all the electrical wires and ensure all are properly covered.
2. If some parts of electrical wires or junctions are old and uncovered, fix them carefully with an electrical adhesive tape. Do not leave any junctions uncovered and be sure that nobody will touch them.
3. Regularly clean electrical wires, particularly connecting parts. Remove all dust as this may cause fire accidents.
4. Don't get any part of electrical wires and junctions wet.
5. Any damaged or scratched electrical junctions must be replaced with new, safe ones immediately.
6. Make sure electrical circuits are enclosed, insulated, earthed and properly fused. Ensure they are not overloaded.
7. Protect all circuits and wires with circuit breakers or fuses. The main power switches and breaker boxes should be clearly marked.

WAY TO PROMOTE COOPERATION

Learn basic electrical safety from experienced, qualified people. There should always be some persons nearby who are strong in electrical safety. Ask them to come to see your home workplaces for practical advice on electrical safety. Share these experiences among other home workers.

SOME MORE HINTS

- When repairing electrical wires and circuits, disconnect all the electrical connections to ensure safety of the repair person.
- Use approved electrical plugs and circuits. Cheap versions may cause short circuits, resulting in accidents and machine breakdown.
- Avoid placing electrical wires on the floor. This will cause tripping accidents. Instead, safely fix the wires on the walls.

POINTS TO REMEMBER

Home workers should have basic knowledge on safe use of electricity.

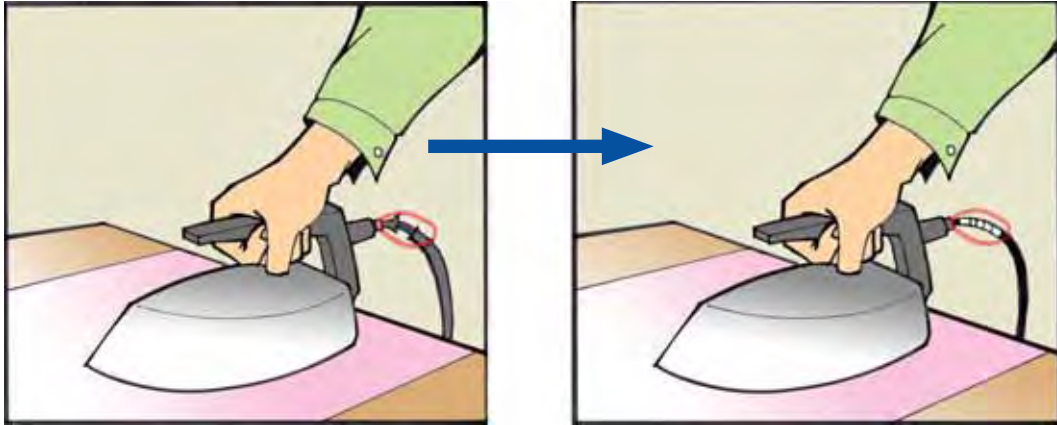


Figure 26: Check all electrical junctions. Fix with an electrical adhesive tape. Do not leave any junctions uncovered. Be sure that nobody touches them.



Figure 27: Switch board and wires are carefully sheathed.



Figure 28: All electrical equipment should be earthed correctly. An independent earthing rod should be used to connect earthing wires from machines.

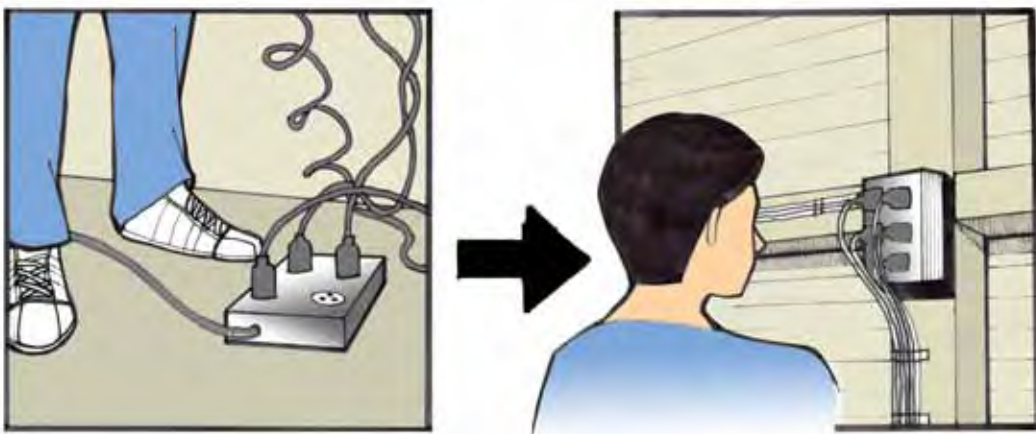


Figure 29: Ensure safe wiring connection for supplying electricity to equipment and lights.

Work Improvement for Safe Home

Chapter 3

Work-stations

(Checkpoints 11-14)



CHECKPOINT 11

Adjust working height for each worker to elbow level or slightly lower than elbow level.

BENEFITS FOR HOME WORKERS

Proper working height is very important for the work of home workers. Working height is directly related to your health and productivity. If the working height is too high, your arms and shoulders are kept elevated and you will suffer from strain. When the working height is too low, you will have to bend your back continuously and will have low-back strain. These strains will gradually increase stiffness and pain. It will eventually be difficult for you to work.

Adjusting the working height for each home worker to elbow level or slightly lower than elbow level minimizes your muscular effort in your arms, shoulders and back. This principle is applicable for both standing and sitting postures. The improved working height helps make your work comfortable and more productive.

HOW TO IMPROVE

1. Look at your work-stations and chairs. If they are too high or too low, adjust their working heights to your elbow level.
2. If you cannot change the height of workstations and chairs, use a foot platform for small workers and an item holder for tall workers.
3. When you need to exert greater force such as cutting products and repairing tools, adjust the work stations slightly lower than your elbow level.
4. When you newly make or purchase chairs and tables, select the ones with the working height adjusted to your elbow height.

WAY TO PROMOTE COOPERATION

Many home workers make their workstations themselves. In your workplaces, or community, there must be someone who is skilled in making chairs and tables. Ask that person to follow the elbow rule when making chairs and tables. These chairs and tables can be made using low-cost materials. You may be able to find some unused wood or steel materials in your workplace.

SOME MORE HINTS

- Ensure all chairs used have sturdy back rests. If not, that attach them.
- Provide an individual chair for each home worker rather than a single long bench shared by many workers.
- For standing workers, provide a standing chair to allow workers to alternate sitting and standing postures. Don't work for a long time in the same posture.
- Some workstations might be shared by several home workers who are of different body sizes. Design height-adjustable workstations using simple devices.

POINTS TO REMEMBER

Adjusting work height at elbow level decreases muscle strain and increases work efficiency.



Figure 30: A working height at elbow level or slightly lower than elbow level minimizes muscular effort.



Figure 31: Provide seated workers with chairs of correct height with sturdy backrest, with the feet comfortably placed on the floor.

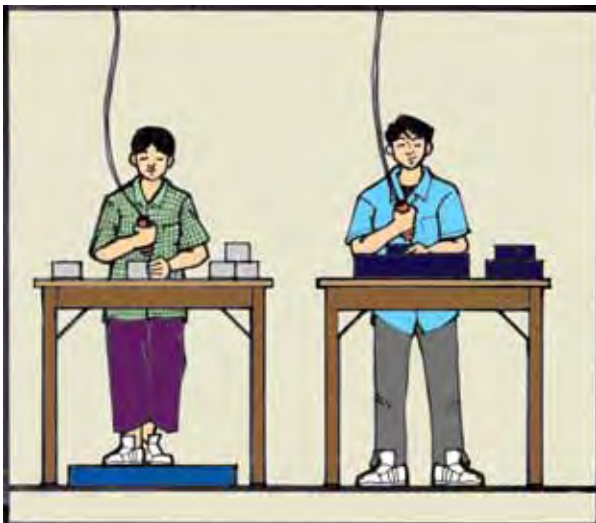


Figure 32: Use a foot platform for small workers and an item holder for tall workers to adjust their work height to their elbow levels.



Figure 33: Provide a standing chair or stool close to your work station. Change work posture occasionally from standing to sitting, or from sitting to standing.

CHECKPOINT 12

Put frequently used tools, controls and materials within easy reach of workers.

BENEFITS FOR HOME WORKERS

Home workers use many kinds of tools, controls and materials. Some of them are small and easy to lose. Your productivity will increase when keeping these tools, controls and materials in good order for easy use.

Frequently used materials should be placed within easy reach of home workers. Use containers, racks or hangers to keep your materials within easy reach in an orderly manner. By doing so, you will minimize unnecessary strenuous movements such as extending your arm or bending your back to reach these materials. You will be surprised with the time and energy saved.

HOW TO IMPROVE

1. Choose most frequently used materials and tools which need to be located within your easy reach.
2. Remove unnecessary items from your workstation to secure the space. Place the selected, frequently used tools and materials within your easy reach.
3. Use boxes and containers to keep small items within easy reach. Put labels on these containers.
4. Tools such as hammers, scissors and knives should be hung at the side of your table.
5. Use side tables for temporarily keeping materials, unfinished products or hand tools.

WAY TO PROMOTE COOPERATION

Productive home workers know how to use their limited space efficiently. They constantly improve the efficiency of their work-stations by removing unnecessary materials and making more space to keep frequently used materials in good order. You can visit such productive home workers and learn from their practical solutions to use the limited work space effectively.

SOME MORE HINTS

- Shelves placed close to your workstations will be useful for keeping less frequently, but still regularly, used materials within easy reach. You can use drawers of your worktable for the same purpose.
- When you keep sharp tools and items within easy reach, place the sharp side downward, or cover the sharp point to avoid injuries.

POINTS TO REMEMBER

Putting frequently used materials within easy reach saves your time and increases productivity.



Figure 34: Use convenient materials containers to keep frequently-used materials within easy reach and in an orderly manner.

Figure 35: Use a side table close to work-stations to place materials temporarily.



Figure 36: Put frequently used tools, controls and materials within easy reach of workers. Place sharp points of tools downward, or cover them.

CHECKPOINT 13

Use jigs, clamps, vices or other fixtures to hold items while work is done.

BENEFITS FOR HOME WORKERS

Jigs, clamps or others fixtures make the work of home workers easier and safer. Garment home workers, for example, have to handle big pieces of fabric. Fixing devices help home workers to keep the fabric in good order for precise processing. Home workers manufacturing furniture or wood products need to use heavy wood materials. Fixtures ensure that workers can use their two hands freely for cutting or handling wood materials.

Imagine that you are cutting your work items with your right hand, while holding the items with your left hand. Your hands may be injured from cutting. If not injured, work pieces slipping from your hands will cause product damage and waste your time.

HOW TO IMPROVE

1. Find your work procedures that need fixing devices. For example, cutting procedures need jigs or clamps to hold items. Fixing is needed when repairing tools and machines.
2. Design and use convenient jigs and clamps to hold your work items.
3. Fix the jig or clamp tightly on the work surface and adjust the actual work height so that work is done at elbow level or slightly lower than elbow level.

WAY TO PROMOTE COOPERATION

Fixtures and clamps may be made locally or purchased for a reasonable price. Consult your friends who have experience with using fixtures. Some home workers may not use fixtures, saying that it takes more time to fix work items. Promote the habit of using fixtures. Home workers using fixtures know the positive effects of making quality products and ensuring safety.

SOME MORE HINTS

- Check whether the fixing forces are strong enough to keep the work pieces secure. This is important for your safety. File sharp edges of the clamp to avoid injuring your skin.
- Regularly maintain and repair a fixing device for its safe and effective use.
- Prepare a good workstation when using fixing devices safely. The workstation should not wobble but be fixed well. It should be wide enough since you may handle, for example, long wood materials or big pieces of fabric.

POINTS TO REMEMBER

Fixing devices make your work easier and safer. You can produce precise and quality products.

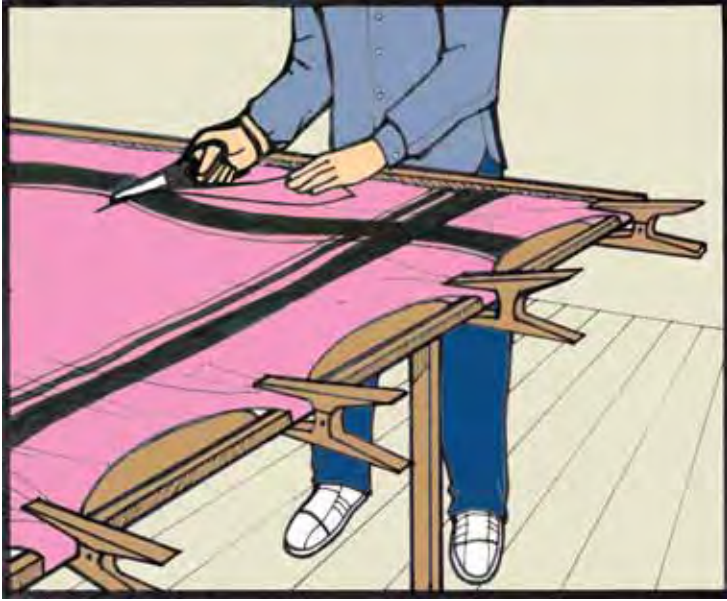


Figure 37: Simple fixture device makes your work easier and safer.

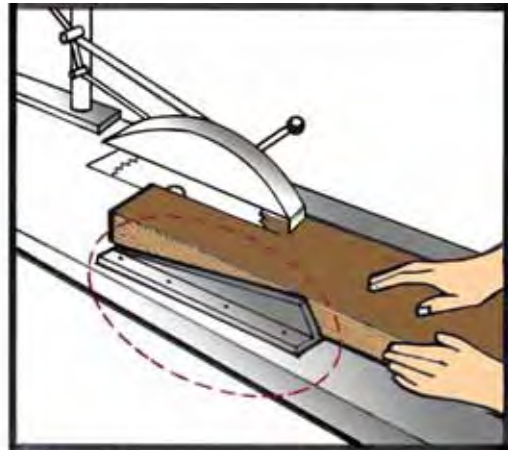
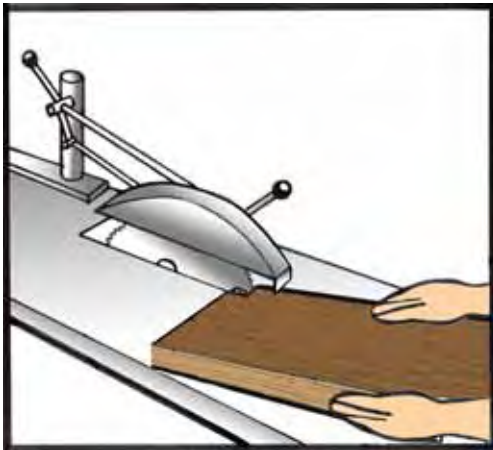


Figure 38: Fixing device to hold work items steadily.

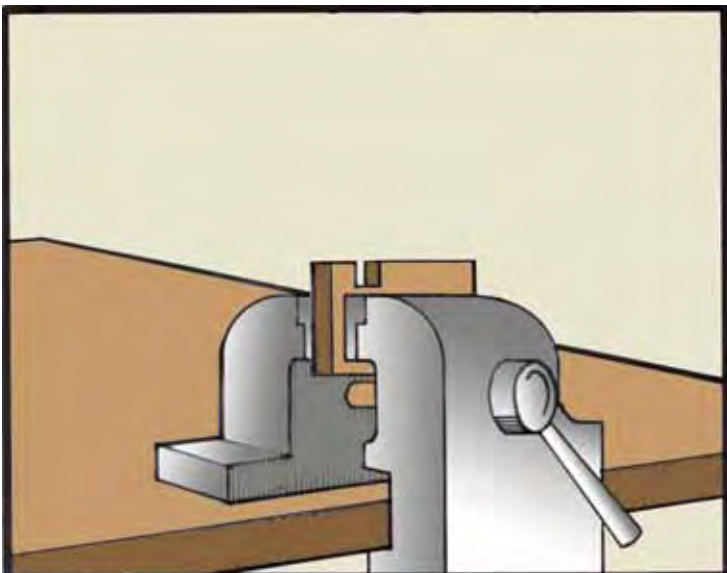


Figure 39: When using jigs, fix them tightly on the work surface. Adjust the actual work height at elbow level or slightly lower than elbow level.

CHECKPOINT 14

Provide a conveniently placed home for each tool.

BENEFITS FOR HOME WORKERS

Home workers use many tools and need to keep them in good order. This is very important for home workers since most of their workplaces are narrow and they need to use the limited space effectively. Many tools scattered around on the work-stations or on the floor will make your work unsafe and difficult. Your tools can be easily damaged. Time and effort to search for lost tools will be huge.

Many wise home workers have developed a home for each tool and put back their tools in their designated homes immediately after use. Home workers can easily know whether all tools are “at home”. This creates safe and productive workplaces.

HOW TO IMPROVE

1. Collect all the tools scattered around. Sort them out by purposes.
2. Develop “homes” for these tools. Make a convenient cabinet or hanger using wood pieces or other available materials. Hang measures, scissors, knives and other tools in a safe and efficient manner.
3. Draw the shapes of different tools on the tool board to show where every item goes, or you may put labels showing the name of the tools. At a glance, everybody will find where tools should be placed.
4. It is also a good idea to attach wheels to your tool cabinet. You can bring a set of tools easily to the place where you need to use them. Return this movable tool cabinet back to the original place after use.
5. For small tools or work items, place them in special bins or trays first, and then put these bins and trays in a tool cabinet.

WAY TO PROMOTE COOPERATION

Several home workers in your workplace may use the same tools together. Identify such tools, design a home for tools together and place that home for tools in a convenient place for everyone. As usual, you can start with simple and easy actions, and improve step-by-step.

SOME MORE HINTS

- Be aware of sharp points on the tools. Keep your tools with the sharp points downward. Place safety caps on the sharp edges of tools such as knives or scissors.
- The home for tools (cabinets and hangers, etc) should be near home workers so they are easy-to-reach.
- Regularly check and maintain the home for tools. The home should be fixed tightly for safety.

POINTS TO REMEMBER

A “home” for each tool helps home workers to use their limited space productively.

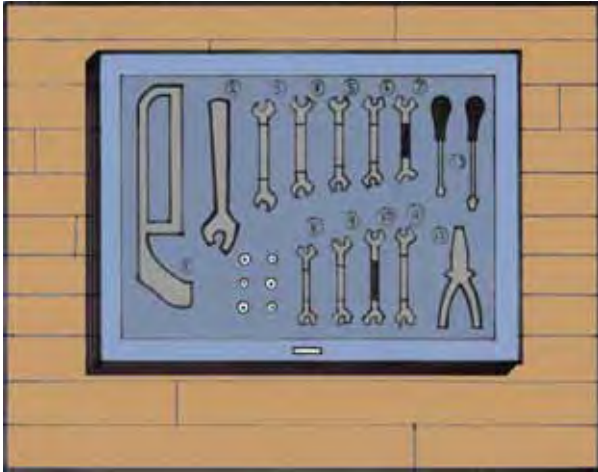


Figure 40: Provide a conveniently placed “home” for each tool.

Figure 41: Use a wooden wall to fix tool hangers. Mark the shape of each tool clearly and distinctly.

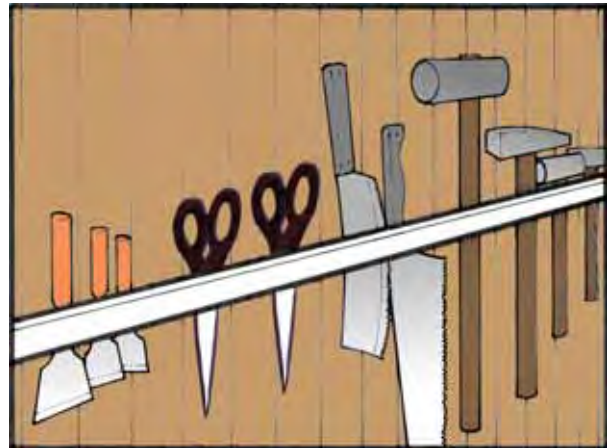


Figure 42: Movable cabinet to store tools and materials.

Work Improvement for Safe Home

Chapter 4

Physical environment

(Checkpoints 15-23)



CHECKPOINT 15

Add more daylight and keep skylights and windows clean.

BENEFITS FOR HOME WORKERS

Bright and pleasant work environments make the work of home workers safe and productive. There are numerous merits in a bright work environment, such as fewer mistakes, smaller accident risks, less eye strain and better work postures (less bending), etc. In winter or in cold work environments, daylight makes your workplace warm.

To make the work environment brighter, home workers can use daylight effectively. Daylight is free and you can save your electricity bills. Keep skylights and windows clean to allow more daylight in. Daylight also reduces moisture and kills termites in your workplace.

HOW TO IMPROVE

1. Clean existing skylights and windows to allow more daylight into your workplaces. Make it your habit to regularly clean skylights and windows.
2. Remove obstacles that block daylight from the window area.
3. Walk around your workplace and find the sections that need more lighting. Reposition them to brighter places near a window area.
4. Use translucent materials in the ceiling to allow more daylight in if existing lighting sources are insufficient.
5. If appropriate, make more windows or enlarge existing windows to take more advantage of the daylight.
6. Paint walls and ceilings in light colours. The colours increase the reflection of light and make your workplace brighter. Light-coloured walls also create a pleasant atmosphere in your work environment.

WAY TO PROMOTE COOPERATION

Exchange ideas on how to make your workplaces brighter and more comfortable using the options mentioned above. This must be a pleasant discussion among the home workers. Many actions for improvement do not cost much, but they increase job efficiency. Visit other home workplaces nearby to learn from their good experiences.

SOME MORE HINTS

- Put a make-shift cover over the translucent materials to shut out the daylight when the sunshine is too strong. Also use curtains or screens at the window to adjust incoming light.
- Avoid working at night. Work during the daytime and take maximum advantage of daylight. Start work earlier in the morning rather than staying in the workplace after dark.

POINTS TO REMEMBER

Daylight is free of charge and a great source to help home workers improve safety and efficiency.



Figure 43: Add more daylight for lighting up the workplace.

Figure 44: Clean doors and windows to remove obstacles that prevent daylight from coming in.



Figure 45: Use transparent materials or translucent plastic panel in the ceiling or the roof to allow more daylight in.

CHECKPOINT 16

Provide general artificial lighting and local task-lights adequate for the type of work done.

BENEFITS FOR HOME WORKERS

It is difficult to introduce more natural daylight into the home workplace if it is enclosed by walls. If this is the situation, use general artificial lights and local tasklights to supplement natural daylight. General artificial lighting improves overall brightness in your workplaces.

Many home workers in garment manufacturing or small handicraft making, for example, require precise finger movements and need more brightness. Task-lights will help you. Dangerous work such as cutting wood or punching metals, etc. also needs task-lights at the operation point to protect your hands. Use your three light sources (daylight, general artificial lights and local-task lights) wisely to secure necessary brightness for your work. Effective combination of daylight and artificial lights should be carefully considered. There are many ways to increase the power of artificial lights at low-cost, such as regular cleaning and maintenance of bulbs, re-positioning of lamps, or elimination of glare. Your safety and productivity will surely increase.

HOW TO IMPROVE

1. Identify the areas where daylight cannot provide sufficient brightness for your work. Plan to add artificial light sources.
2. Improve existing artificial light sources used in your workplace. Clean all the bulbs. Examine if the lighting conditions will improve by re-positioning the light sources, or re-locating the work-stations and machines. Use reflectors to better disperse the general artificial lighting.
3. Provide local task-lights for precision, inspection and dangerous work where workers need more brightness.
4. Attach a lamp shade to the local tasklight and eliminate direct glare on workers.

WAY TO PROMOTE COOPERATION

Jointly examine lighting conditions among home workers working in the same workplace. Identify the work that needs additional lighting to secure safety and increase productivity. Their past experiences of eye fatigue and near accident experiences should be discussed to find possible preventive measures. Develop ideas for using the three light sources (daylight, general artificial lighting and local-task lights) most effectively.

SOME MORE HINTS

- Place the light sources on your left side to avoid the shadow of your right hand. Left-handed home workers can place the light sources on their right side for the same reason.
- The intensity of daylight will fluctuate with the time, weather and season. Consider this fluctuation when choosing additional artificial light sources.

POINTS TO REMEMBER

Artificial light sources need careful planning and maintenance for effective use.



Figure 46: A lamp shade helps tasklight focus on the work area and eliminates direct glare on workers.

Figure 47: Provide bench lighting for work with small objects.



Figure 48: Combination of general and task lights gives better dispersion.



CHECKPOINT 17

Isolate the sources of dust, hazardous chemicals, noise or heat from the workplace.

BENEFITS FOR HOME WORKERS

Home workers need practical ways to control dust, chemicals, noise or heat sources at low-cost. Dusty work environments, the strong smell of chemicals, loud noise and excessive heat will interrupt workers' attention to their work and increase accident risks. Everyday exposure to these hazards will gradually damage your health.

The best solution is to isolate these hazard sources from the workplace. Another practical method is to enclose or screen the sources of dust, chemicals, noise and heat. These isolation measures enhance health and productivity of home workers.

HOW TO IMPROVE

1. Identify the sources of dust, hazardous chemicals, noise and heat disturbing your work.
2. Move the sources of dust, chemicals, noise and heat away to a separate area outside the workplace, or an isolated place where no home workers work.
3. After moving, enclose or screen the hazard sources to prevent the hazards from reaching the workers. Ensure that your family and children cannot reach the areas where hazard sources are located.

WAY TO PROMOTE COOPERATION

Identify and move hazard sources together. Learn from the home workers who have already isolated the hazard sources successfully in their limited work areas. There are many practical solutions for isolating hazards, such as hand-made covers, simple partitions, or local exhaust ventilation methods. They can be made using available materials such as wood or steel plates to make screens and enclose the hazardous sources.

SOME MORE HINTS

- Collect information about the chemicals you are using from local health or industrial offices. Chemical sellers should provide you with the information, too. Replace the existing chemicals with safer ones.
- Use personal protective equipment such as masks, gloves or goggles when the hazard sources are not controlled.
- Ensure that the hazard sources in your workplaces do not pollute the environment of surrounding communities.

POINTS TO REMEMBER

Isolate the sources of dust, chemicals, noise and heat using low-cost, practical improvement measures.

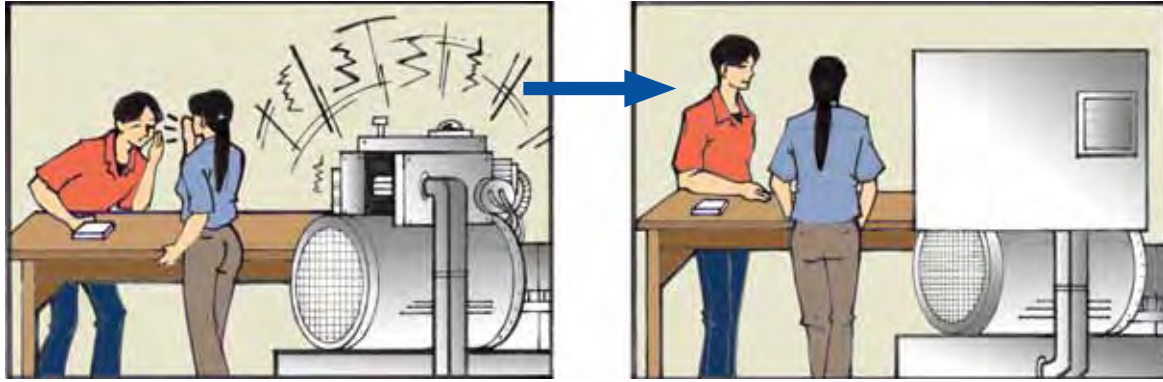


Figure 49: Enclose a noisy machine to decrease noise and increase safety.



Figure 50: Use local exhaust ventilation against heat radiation and pollution.



Figure 51: Store hazardous chemicals outside work areas with a firm lock. Ensure children do not come into contact with them.

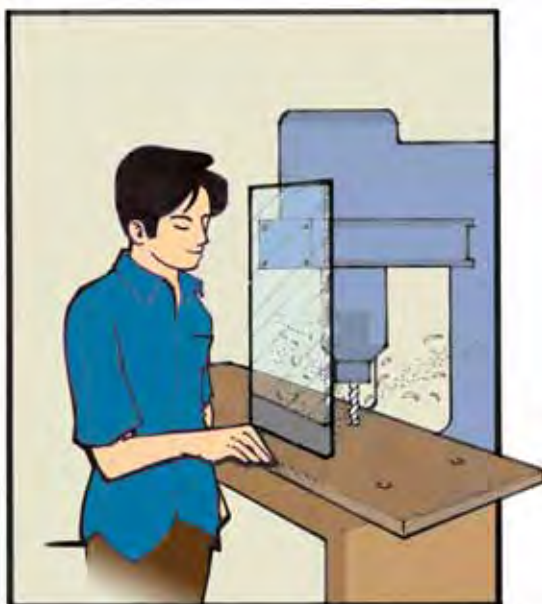


Figure 52: Transparent shield to prevent sawdust from reaching the worker.

CHECKPOINT 18

Make sure all the containers of hazardous chemicals have labels and covers.

BENEFITS FOR HOME WORKERS

Home workers use many chemicals such as solvents, paints or glues. Put labels on all the containers to avoid misuse and poisoning. The labels should be clear and easy-to-read. The labels will protect your family and co-workers, too.

All chemical containers should have covers to prevent evaporation. Narrow home workplaces without sufficient ventilation are easily filled with chemical smells and become dangerous and unproductive. Flammable chemicals increase the risks of fire. Covering chemical containers will improve these problems. Loss of expensive chemical materials will decrease, too.

HOW TO IMPROVE

1. When purchasing chemicals, ensure that the containers have labels and covers.
2. Check whether all the chemical bottles and containers in your workplace have labels and covers. If not, attach them.
3. Label the name of the chemicals in the local language using big letters. Make sure that all home workers and your family can understand the labels.
4. The labels of toxic chemicals should have the warning, "VERY TOXIC". Use easy-to-understand danger symbols such as skulls and cross bones.
5. Ensure the use of covers on chemical containers. Open the chemical containers only for a minimal duration when used. Cover the containers again soon after use. The covers should be easy to open and close.
6. Replace old, unclear labels with new, clear ones.

WAY TO PROMOTE COOPERATION

Using labels and covers is the first important step to ensure safe use of chemicals. Exchange experiences with other home workers. Prepare the labels with your co-workers and ensure that everyone at the workplace understands the labels. Even though you are familiar with chemicals, labels are necessary to protect other home workers and your family against dangerous misuse.

SOME MORE HINTS

- Use small containers instead of large containers. Small openings will reduce the amount of vapor loss through evaporation. Do not use the chemical containers for other purposes.
- Collect information on toxicity, flammability and emergency measures for the chemicals you are using. The chemical sellers have a duty to give you chemical information sheets.
- Make a list of chemicals used in your workplace. Record when you purchased them and put labels on them.

POINTS TO REMEMBER

Putting labels and covers on chemical containers are the low-cost ways to improve safe use of chemicals.



Figure 53: Put clear and easy-to-understand labels on dangerous chemical bottles to avoid misuse.



Figure 54: Storage cabinet with multi-compartments to keep all chemicals in good order.



Figure 55: Collect waste bottles of dangerous chemicals in a separate container.

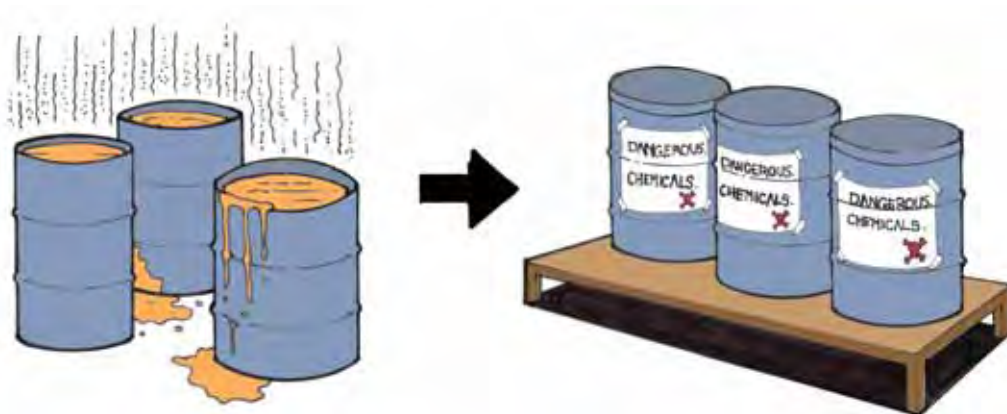


Figure 56: Chemical cans stand on a platform with secure lids to block evaporation and prevent pollution.

CHECKPOINT 19

Protect your workplace from the cold.

BENEFITS FOR HOME WORKERS

In countries which have cold winters, protecting workers and workplaces from the cold is important for safety and productivity. Home workers need practical measures to keep the workplace warm.

Prevent the cold coming from outside into your workplaces. This is the practical first option in protecting from the cold. Check your workplace buildings, walls and roofs. Practical, low-cost ideas will greatly improve protection from the cold.

HOW TO IMPROVE

1. Use the thick materials for the wall of your workplace. If it is too thin, add adequate wood or brick backing materials to protect from the cold outside. Unnecessary openings or holes in the wall should be filled or covered.
2. Make a ceiling under the roof. The double layers can more effectively prevent against the cold outside.
3. Wear sufficiently warm clothes. Traditional warm clothes in cold country areas meet the purpose. Protect your fingers and toes. They easily suffer from chilblains since blood circulation to fingers and toes decreases when they are exposed to the cold.
4. Close the door soon after opening it. A simple spring device helps close the door automatically.

WAY TO PROMOTE COOPERATION

Carefully designed work premises are strong against the cold. We can learn from traditional ideas to protect from the cold using locally available materials. Many home workers know how to protect their workplaces from the cold and continue to improve protection measures. Exchange ideas on how to strengthen protection from the cold using locally available materials and resources.

SOME MORE HINTS

- Apply double glass windows to keep your workplace warm. Ensure that there is no air leakage or broken parts.
- Use appropriate shoes to prevent slipping accidents when passageways are cold and frozen.
- Plant trees (evergreen trees if possible) surrounding your workplace building. The trees will block strong and cold wind in winter. Consider the direction of wind and select the best places for planting trees.
- Start work late in the morning after the workplace becomes warmer.
- Provide local heating near workers when the other protective measures do not work. Circulate air regularly to prevent lack of oxygen.
- Avoid overheating. Change clothes if you are sweating.

POINTS TO REMEMBER

Using practical, low-cost measures, prevent cold outside air from coming into your workplace.



Figure 57: Simple spring device to close the door automatically after opening.

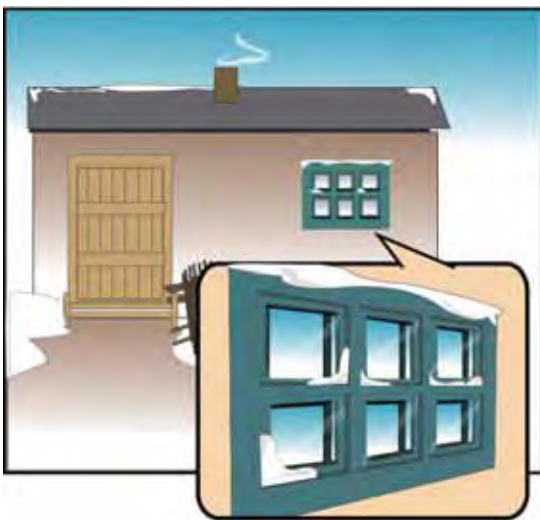


Figure 58: Double-layered window to prevent outside cold air from coming in.



Figure 59: Wear thick and warm clothes when working in the cold. Protect your head, hands and feet, too.



(Outside)



(Inside)

Figure 60: Mongolian ger (traditional tent) gathers local wisdom to protect home workers from the cold.

CHECKPOINT 20

Improve the heat protection of your work premise by backing walls or roofs with insulating materials.

BENEFITS FOR HOME WORKERS

A comfortable thermal environment increases safety and productivity in your workplace. It is difficult for home workers in a hot working environment to concentrate on their work. They are easily exhausted, make more mistakes, and might even have an accident.

There are many low-cost ways to control heat. Protect against outside heat coming into your work premise. Back walls and roofs using low-cost insulating materials such as wood and bricks. You will be able to have comfortable work environments and higher productivity.

HOW TO IMPROVE

1. Look at the wall of your workplace. If it is too thin, add adequate wood panels or bricks as the backing materials to protect against outside heat. Unnecessary openings or holes in the wall should be filled or covered.
2. Make a ceiling under the roof since a single metal roof easily overheats. The double layers protect against penetration of outside heat into your workplaces.
3. Plant trees surrounding your workplace building to block strong heat and sunshine. Select the best places to make shade to protect the building.
4. If your workplace has hot machines, furnaces or other heat sources, move them outside, or use partitions to block direct heat radiation from workers.

WAY TO PROMOTE COOPERATION

There are many low-cost ways to improve hot working environments. Protection from heat greatly improves when several measures are taken together. Check your work environments with other home workers. Learn from local good examples on ways to protect work premises from strong heat from the sun. At the same time, improve airflow to take away hot air from inside. Take regular breaks together with your co-workers and have some cold water.

SOME MORE HINTS

- Secure sufficient natural ventilation through openings and windows.
- Supply safe, cold drinking water near the workplace.
- Heavy work such as carrying heavy loads should be done in the early morning or in the late afternoon when it is cooler. Take frequent short breaks to avoid heat stroke.

POINTS TO REMEMBER

Backing walls and roofs protects your workplace against heat and contributes to health and higher productivity.



Figure 61: Installing a ceiling is an effective way to reduce heat penetration from outside.



Figure 62: Use window blinds against solar radiation.

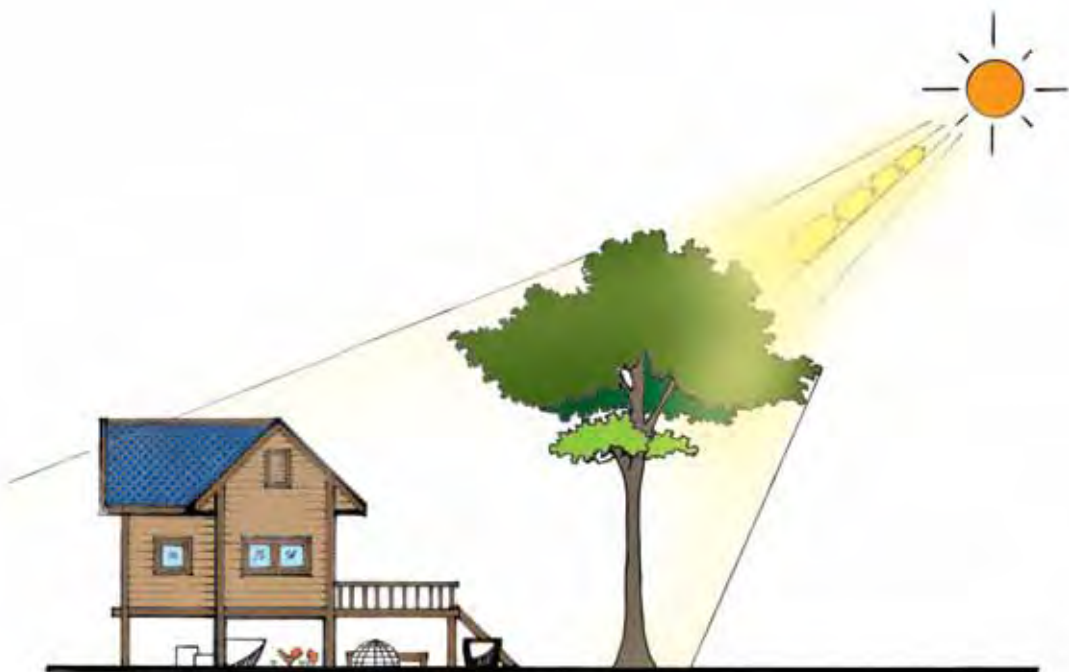


Figure 63: Trees are a natural heat protection. They also keep out strong, cold wind.

CHECKPOINT 21

Increase natural ventilation by having more openings, windows or open doorways.

BENEFITS FOR HOME WORKERS

Small home workplaces with poor ventilation can easily accumulate heat and polluted air. Many home workers spend many hours a day in an indoor climate. Both home workers and their family members will be adversely affected. A poorly ventilated environment is especially harmful to older people and children.

When it is hot, increase the natural air flow. More openings, windows and doorways increase natural ventilation and make home workplaces comfortable and pleasant. These practical improvements are possible at low-cost. You will be surprised at the positive effects on health and productivity.

HOW TO IMPROVE

1. Walk around your home workplace and check if natural airflow is sufficient. Listen to the voice of other home workers. Relocate work-stations and tables to the areas with a better natural airflow.
2. If existing airflow is insufficient, increase the number of openings, windows and open doorways. Consider the direction of the wind and sunshine to get the maximum positive effects of the new openings and windows.
3. Another possible way is to make existing windows larger.
4. Open windows regularly and frequently.
5. Use electric fans for the work areas where sufficient natural airflow is not secured.

WAY TO PROMOTE COOPERATION

Plan ways to increase natural airflow with your workmates and neighbouring home workers. There are many opportunities for cooperation, for example, removing unnecessary materials that block airflow, making more openings in the wall and enlarging windows, etc. Visit other home workplaces and look at how natural airflow is secured.

SOME MORE HINTS

- Make small openings in the roof. Natural upward airflow will release heated air through the openings.
- Existing windows and doorways might be blocked in your home workplace. If so, remove obstacles to better air flow.

POINTS TO REMEMBER

Natural air flow provides comfortable work environments by taking away heat and polluted air.



Figure 64: Open windows to increase the use of natural ventilation to improve the indoor climate.

Figure 65: Select the most ventilated area to install the work-stations. Place the table near the window for good air flow.



Figure 66: Use an electric fan in situations where sufficient natural airflow is not secured.

CHECKPOINT 22

Provide adequate clothes and personal protective equipment such as glasses, shoes and gloves.

BENEFITS FOR HOME WORKERS

Home workers handling hazardous materials need adequate clothes and personal protective equipment such as glasses, shoes and gloves. They protect a certain part of your body from hazardous materials. Though isolation and enclosing is the first option to protect home workers from hazard sources such as dust, chemicals, noise or heat, home workers often need additional protection by using personal protective equipment to reduce the contact with these hazard sources.

Select personal protective equipment carefully, and use them properly. Otherwise, home workers will misunderstand they are well protected when in fact they are not. While using personal protective equipment, home workers need to continue their efforts to isolate hazard sources.

HOW TO IMPROVE

1. Examine whether additional measures to isolate and enclose hazard sources are possible. If these measures still do not work well, find the work areas where home workers need to wear personal protective equipment.
2. In the work area using chemicals, fire, welding, metals, etc. workers need to wear long-sleeved shirts, trousers and shoes to cover your feet. Slippers and sandals are not appropriate.
3. Choose protective gloves suited to your jobs. Thick gloves are needed for jobs that require grip strength (cutting long wood materials, etc.) or handling sharp items (processing metals, etc.). Use appropriate gloves when handling chemicals.

4. Masks have to be well-fitted to your face shape. Filter masks containing activated carbon are needed when handling evaporating chemicals such as solvents or glues. Don't use expired filter masks.
5. Change clothes after work. Don't enter your living areas wearing your work clothes. You may spread hazardous chemicals to your family.

WAY TO PROMOTE COOPERATION

You should seek technical advice from local industrial or health offices for selecting the right protective equipment and using it correctly. Experienced home workers or sellers and manufacturers of chemical substances will also help. Some home workers may be reluctant to use personal protective equipment. Encourage them to use it as a habit.

SOME MORE HINTS

When accidentally exposed to a large amount of hazardous substances, take an emergency shower and change your clothes immediately.

- Clean and maintain every protective device regularly. Store them properly.

POINTS TO REMEMBER

Select right personal protective equipment and use it properly as your habit.



Figure 67: Use appropriate shoes, gloves and other protective devices to protect home workers.



Figure 68: Wear gloves, masks with filters, and long-sleeved shirts when using hazardous chemicals.



Figure 69: Maintain personal protective devices in an orderly way. Clean and renew them regularly.

CHECKPOINT 23

Provide at least two unobstructed exits from rooms and enough fire extinguishers.

BENEFITS FOR HOME WORKERS

Home workplaces need a plan for practical fire prevention and emergency evacuation. Home workplaces often use flammable materials in their small space, and it is easy to have a fire. The fire can spread quickly to all work areas once it begins. There should be a sufficient number of fire extinguishers. Let everyone know how to use them.

Every work area has to clearly indicate at least two unobstructed exits for emergency evacuation. If your workplaces are on the second or higher floors, in addition to the routine transport route, secure an additional escape route. For example, an emergency ladder through the balcony, etc. is needed. These arrangements will save your lives and those of your friends and family members.

HOW TO IMPROVE

1. Secure at least two unobstructed exits from every big room. Remove all the materials blocking the exits.
2. Regularly check that the evacuation exits are clear. Don't lock the door on the evacuation route.
3. Ensure that all home workers in your workplaces and your family know the two evacuation exits.
4. There should be clear signs and indications to show the evacuation routes and emergency exits.
5. Provide sufficient number of fire extinguishers, at least one in each work area. They should be within reach of all home workers.
6. All home workers and your family members should have training on how to use the equipped fire extinguishers.

WAY TO PROMOTE COOPERATION

Jointly check the evacuation exits and fire extinguishers with your co-workers and family members. Plan and carry out a fire evacuation drill with all of them. Invite home workers nearby. Seek advice and cooperation from the local fire station for successful implementation.

SOME MORE HINTS

- Check the expiry dates of fire extinguishers regularly. Replace the expired fire extinguishers with new ones.
- All the instructions on how to use fire extinguishers and the signs for evacuation routes should be written in the local language.

POINTS TO REMEMBER

Unobstructed evacuation exits will save the lives of home workers and their families in an emergency.

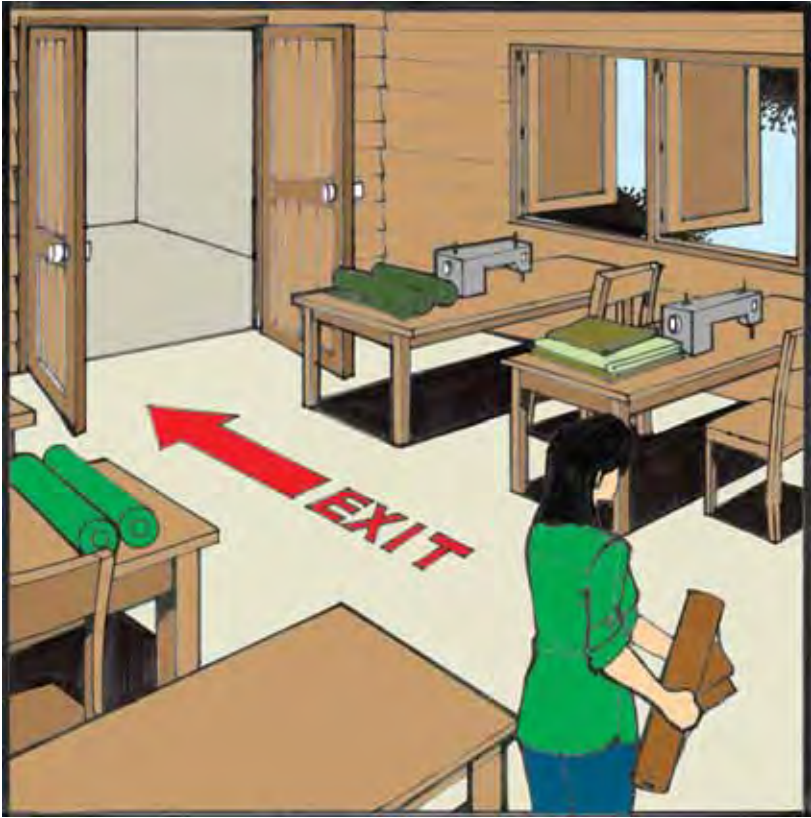


Figure 70: Provide at least two unobstructed exits for home workers to evacuate in an emergency.

Figure 71: Provide enough fire extinguishers within easy reach and be sure that all home workers in your workplace know how to use them.



Work Improvement for Safe Home

Chapter 5

Welfare facilities and Work organization

(Checkpoints 24-30)



CHECKPOINT 24

Provide an adequate supply of safe drinking water in all workplaces.

BENEFITS FOR HOME WORKERS

Home workers need safe drinking water when they work. Especially in a hot environment, you can easily lose water from your body and become thirsty. This increases fatigue and lowers productivity.

Keep drinking water close to you for regular sufficient water intake. You will also save time when getting a drink. Select hygienic and convenient places to keep drinking water. The places should be away from toilets, chemical storage or dangerous machines. Your water should not be contaminated with dust, chemicals or other hazardous substances.

HOW TO IMPROVE

1. Find convenient places to keep drinking water close to your workstations.
2. Ensure that your drinking water is clean and hygienic. Usually, you need to boil water from public water supply systems. If you use rain water and underground water, filter the water to remove debris and other contaminants. Boil it for at least 15 minutes. Pour it into a clean bottle or a container and cork it firmly.
3. Keep the water containers in safe and hygienic places. The water in the container must be changed frequently.
4. Provide separate cups for all workers. Wash them regularly, and keep them in a hygienic condition.
5. Keep drinking water away from the chemical sources in your workplace to prevent contamination.
6. When containers or filters are used, clean them regularly.

WAY TO PROMOTE COOPERATION

Cooperate with your work mates to find safe drinking water sources, and select convenient places to keep drinking water. When home workers work hard, they often forget their need for regular water intake. Have regular breaks together and drink water. This habit will keep you and your colleagues healthy and productive.

SOME MORE HINTS

- When working in a cold work environment, prepare a hot drink. It will refresh home workers and make them warm and healthy.
- Home workers working in a hot working environment prefer cold drinking water. Use a refrigerator or watercooler if available. Otherwise, keep the water in a cool place.
- Home workers engaged in heavy work, such as carrying heavy loads or working in front of a furnace, need larger amounts of drinking water.
- Beer, whisky and other alcoholic beverages will increase your mistakes and the possibility of accidents. Don't drink them before and during work. They cannot be a substitute for water.

POINTS TO REMEMBER

Home workers should always have easy access to safe drinking water.



Figure 72: All home workers should have easy access to safe drinking water in the workplace all the time.

Figure 73: Keep water and cups clean and hygienic.



Figure 74: Rain or underground water must be filtered and boiled to avoid possible contamination.



CHECKPOINT 25

Provide clean toilets and washing facilities with soap close to the work area.

BENEFITS FOR HOME WORKERS

Clean toilets and washing facilities are an essential requirement for creating a hygienic and comfortable working environment for all home workers. Toilets should be located close to, but a little isolated from, the work area for comfortable access by home workers, particularly women workers.

Washing facilities near the work area help home workers regularly clean their hands and other parts of their bodies. Home workers using chemicals and other dangerous substances have to regularly wash out these substances to avoid skin absorption and to prevent them eating meals with contaminated hands. Regular washing will also prevent home workers from carrying the dangerous substances back home.

HOW TO IMPROVE

1. Equip the toilet with a water container, toilet paper, a garbage bin with a cover, a brush and soap. Clean the toilet every day and keep flies away.
2. Build a toilet easily accessible to all home workers. Consider privacy. It is ideal to make two toilet facilities, one for women and another for men.
3. Install washing facilities close to the work area. To ensure quick and proper washing, soap must be provided.
4. Provide a bath room fenced appropriately for privacy.

WAY TO PROMOTE COOPERATION

Washing and bathing habits after work protect you and your family from being contaminated by chemicals and other hazard sources at the workplace. Promote such habits in cooperation with other home workers together. Clean toilets are also essential for hygienic workplaces. Make a joint plan to clean the toilet and washing facilities together with coworkers.

SOME MORE HINTS

- When designing toilets and washing facilities, consider easy maintenance. Tiled floors and walls are easier to clean.
- Pay special attention to the needs of women home workers for their easy and comfortable access to the toilet. They should not refrain from urinating. This could cause urinary tract infection.
- Properly dispose of the waste water from your toilets and washing facilities. It should not pollute the community. An appropriate drainage system should be installed. This will be a good opportunity for community cooperation.

POINTS TO REMEMBER

A sanitary toilet and washing facility near the workplace is a basic necessity for the health of home workers.

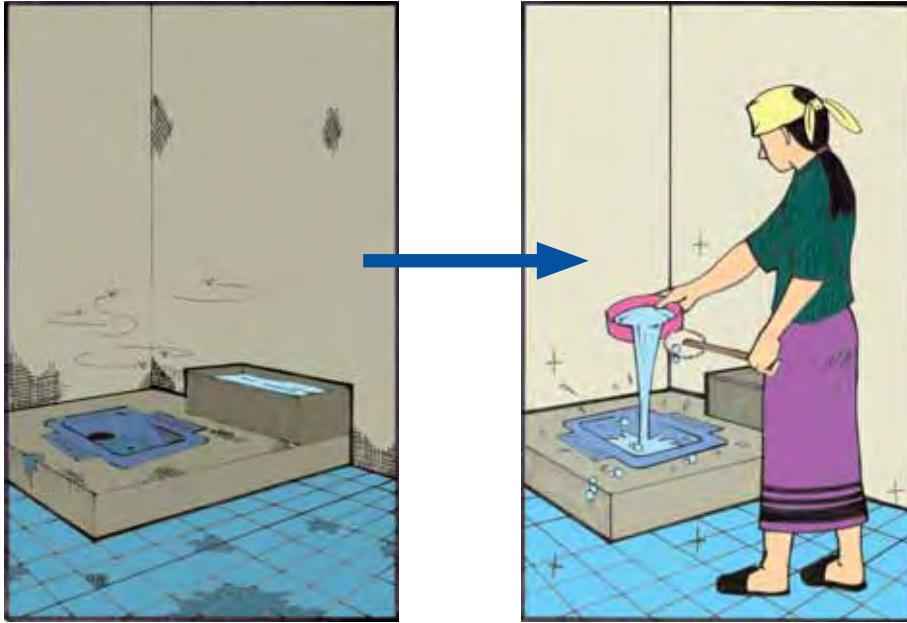


Figure 75: Clean toilets regularly to create hygienic working and living environments.



Figure 76: Appropriate washing facilities with soap are essential for all home workers.



Figure 77: An enclosed, low-cost bathroom refreshes home workers after their hard work.

CHECKPOINT 26

Provide resting corners and a separate hygienic place for eating meals.

BENEFITS FOR HOME WORKERS

Spending short breaks in comfortable resting corners refreshes you and facilitates recovery from fatigue. You can work more efficiently after quality breaks. Find a small space and set a chair for resting. Come out from the workplace for a moment.

You should not eat meals at the workplace to avoid any contact with dirt, dust or dangerous substances used during the work process. Your eating places and living quarters have to be separate from the work area. Make your eating places bright and pleasant.

HOW TO IMPROVE

1. Set a simple resting corner near the workplace. Bring a table and chairs for home workers to enjoy tea and coffee. Plant trees and flowers near the resting corner.
2. Provide an eating place or room separate from the work area. The eating space could include a small area where workers can prepare drinks or heat their food.
3. When the home workers' residences are close to the workplace, eating at home could be an option.

WAY TO PROMOTE COOPERATION

Secure a space for resting and eating corners in cooperation with co-workers. Some home workplaces may be able to jointly develop an eating and resting place. In a nice resting environment, you can enjoy pleasant conversation with your co-workers. These resting and eating places can also be used for meetings or recreational and game activities. Such activities will keep home workers healthy and also contribute to their teamwork.

SOME MORE HINTS

- Equip the resting facility with a hammock, mat and bed for lying down. A short nap after lunch is helpful for keeping you alert for the afternoon work.
- Find low-cost sport facilities such as balls, goals, nets and so on. Board games, magazines and books are also suitable for pleasant resting corners.
- Even during busy working periods, you should maintain good eating and resting habits. Three regular meals a day are necessary.

POINTS TO REMEMBER

Eating and resting outside the workplace refreshes home workers and makes their work more productive.



Figure 78: Provide a hygienic place for preparing and eating meals separate from your workplace.

Figure 79: Home workers can enjoy pleasant conversation in a simple resting facility.

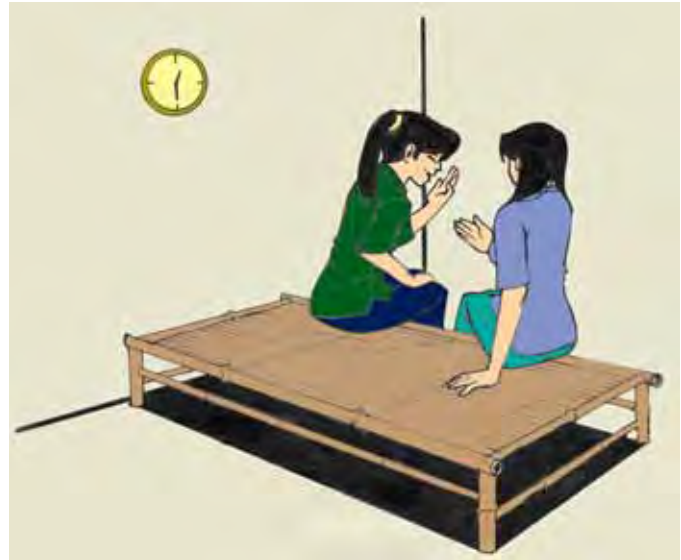


Figure 80: Resting and eating facilities can be used for regular meetings among home workers.



CHECKPOINT 27

Provide first-aid equipment and train a qualified first-aider.

BENEFITS FOR HOME WORKERS

In case of an accident and emergency, appropriate first-aid could save the life of home workers. A practical emergency plan is needed for home workers including provision of first-aid equipment near the workplace and the smooth transfer of accident victims to the nearby hospital.

Home workers should have trained first-aiders among themselves. The first-aiders regularly check the contents of the first-aid equipment. In an emergency, they provide patients with preliminary treatment before being transferred to the hospital.

HOW TO IMPROVE

1. Keep your first aid kit in an easy-to-see place. Let all home workers in your workplace and family members know where it is. The first aid kit box should be located out of reach of children.
2. Select the drugs and equipment necessary for emergency injury treatment for the first aid kit. They are: sanitary cotton, gauzes, alcohol, betadine, bandages, scissors, etc.
3. You can add drugs to relieve common symptoms to the first aid kit, for example, drugs for common cold, fever or diarrhea. However, these common drugs should be in a separate compartment from the emergency treatment set and need to be kept in a dark and cool place.
4. Select volunteer home workers and train them to become qualified first-aiders. Seek cooperation from the community health centre or hospitals to organize first-aid training. Maintain the knowledge and skills of the trained first-aiders.
5. Prepare an emergency plan with co-workers. Identify a clinic or hospital near the workplace and secure transport measures in case of an emergency.

WAY TO PROMOTE COOPERATION

Home workplaces in the same community help each other by sharing drugs or medical equipment. The first-aiders trained should work for all the home workers and community people nearby, as well as for the co-workers. Home workers nearby should establish a joint emergency plan. Emergency cases might happen even at night. Make it clear who should do what in an emergency and how.

SOME MORE HINTS

- Regularly check the quality of the first aid kit. Replace expired, old bandages and gauzes or scissors, etc. with new ones.
- All the drugs should have clear labels written in the local language. Don't use a drug if you are not familiar with it.

POINTS TO REMEMBER

Well-equipped first-aid kits and qualified first-aid skills help you, your family members and your colleagues in an emergency.



Figure 81: Provide first-aid equipment in an easy-to-see place.

Figure 82: Train qualified first-aiders among home workers.

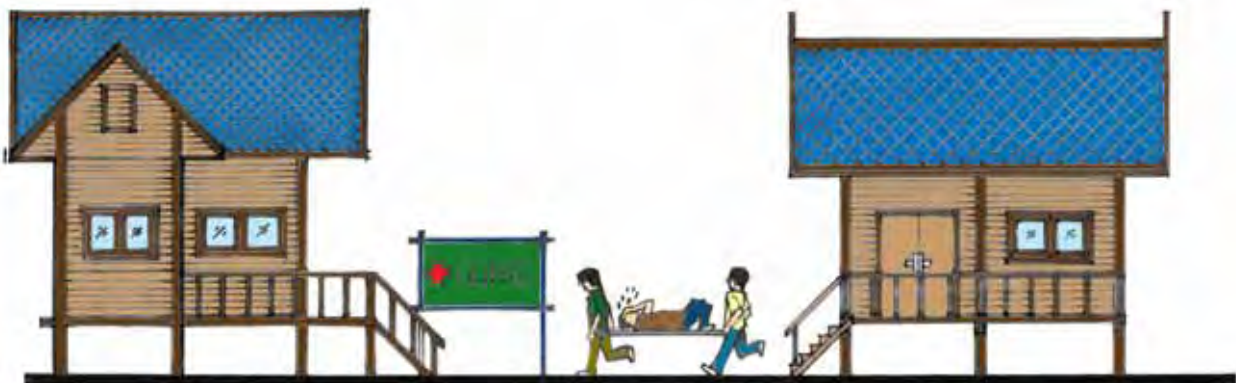


Figure 83: Prepare an emergency plan to transfer patients to the nearby hospital.

CHECKPOINT 28

Adjust workplaces to meet the needs of pregnant women and workers with disabilities.

BENEFITS FOR HOME WORKERS

Pregnant home workers need special attention to their health. Their co-workers should understand their special needs and cooperate. Pregnant woman workers must stop carrying heavy materials and avoid awkward work postures and exposure to hazardous substances. They also need sufficient rest.

Persons with disabilities can work actively in home workplaces. Practical support measures such as improved passageways, better lighting or height-adjusted workstations make their work much easier. Safe and productive workplaces for disabled workers are certainly safe and efficient for other workers, too.

HOW TO IMPROVE

1. Assign pregnant workers to carry out lighter work. Help them avoid the work that needs strength such as lifting or carrying heavy objects.
2. Allow and encourage pregnant workers to take frequent breaks.
3. Adjust workstations to keep pregnant workers in comfortable postures. They need a wider space for leg and body clearance.
4. Adjust toilets, eating and resting corners for the practical needs of pregnant workers and workers with disabilities.
5. Listen to workers with disabilities to make their work easier. For example, workers using wheel chairs need clear passageways with no height gaps. Workers with hearing disabilities need more visual instructions for their work. Workers with visual disabilities may need work instructions arranged in big letters or in Braille. Those with intellectual disabilities may need clear and visual instructions. There are many practical support measures for workers with disabilities.

WAY TO PROMOTE COOPERATION

Cultivate a cooperative culture for pregnant workers and workers with disabilities in your workplace. Sometimes they might need more breaks, or may spend a little longer time when moving around. Your and your colleagues' support will make them confident to do their work. Learn from good examples to create productive workplaces by meeting the needs of pregnant workers and workers with disabilities. Your community people will appreciate your efforts, too.

SOME MORE HINTS

- Allow pregnant workers and lactating workers to work on flexible work schedules. For example, they may come to work a little late in the morning, or leave the workplace early. Some disabled workers may also benefit from flexi-time depending on the barrier they face.
- Consider the needs of older workers. Their skills and experiences are useful for younger workers. Practical support measures such as clear passageways or avoidance of heavy materials handling will enable older workers to remain active.

POINTS TO REMEMBER

Pregnant workers and disabled workers can work better by receiving proper support from other home workers.



Figure 84: Help pregnant workers to work in comfortable postures. Provide stable tables and chairs suited to the body size of a pregnant woman.

Figure 85: Place appropriate guards to prevent children from having accidents or touching hazardous substances.



Figure 86: Some workers with disabilities work better if simple adjustment of their workstations are made.

CHECKPOINT 29

Combine tasks so that each worker can perform varied and interesting work.

BENEFITS FOR HOME WORKERS

Doing the same task everyday is boring. Though monotonous, repetitive work looks easy to perform, actually home workers could experience boredom, increase mistakes, and produce a lower quality product. Also, repetitive motions will easily cause strains and pains in muscles which are repeatedly used to complete the assigned tasks.

Doing a variety of tasks would keep home workers alert and productive. Combine tasks so that each worker can perform varied and interesting work. This experience will assist them to acquire better job skills and ideas on how to complete their product in a more systematic way. For example, garment home workers who have experienced cutting, sewing, knitting, packing, and even simple marketing can open their tailor shops in future.

HOW TO IMPROVE

1. Look at the assigned tasks of yourself and co-workers. If monotonous, combine different tasks or rotate jobs to allow each home worker to experience different kinds of work. Change the rotation regularly.
2. Avoid repetitive work that uses particular muscles frequently and quickly. It could increase fatigue of the muscle. Advise the assigned home workers to slow down the work cycle, insert other tasks and take frequent short breaks.
3. Form a working group with co-workers to combine and rotate different jobs.
4. Help each other to experience new tasks and learn the necessary skills required to perform new tasks.

WAY TO PROMOTE COOPERATION

Job rotation will create opportunities to understand each other's work and increase the teamwork spirit. Some home workers might insist on continuing their simple, repetitive tasks since they are easier. Start with the workers who want to experience different tasks and gradually involve everyone.

SOME MORE HINTS

- Make regular opportunities to communicate with other home workers. Discuss better ways to combine tasks with them.
- Exchange ideas and experiences with regard to better ways to perform the same task among different workers.
- Occasional stretch exercises while working will make you refreshed.

POINTS TO REMEMBER

Combining tasks makes your work more productive and pleasant.



Figure 87: Group work with rotation of different jobs.



Figure 88: Short break during work to recover from fatigue and refresh workers.

Figure 89: Encourage home workers to exchange ideas and information for good team work and productivity.



CHECKPOINT 30

Rearrange layout and flow of work to reduce unnecessary movements of workers.

BENEFITS FOR HOME WORKERS

Home workers need to use their limited work spaces efficiently. Often, simple layout changes can improve the work flow and increase productivity. It is important to carefully look at the existing work flow and decrease unnecessary movements of workers.

Ensure smooth work flow of materials and products between different work-stations or work processes. Buffer stocks are one of the solutions for this purpose. They allow a worker to work at his/her own pace without being bothered by other workers' working pace. Make your work fun without having unnecessary pressure and you will see better team work, productivity and safety.

HOW TO IMPROVE

1. Take a fresh look at your workplace layout and workflow. Find unnecessary movements of workers which can be improved by changing the layout and workflow. For example, if the workers have to walk many times from the storage area to the production area, rearrange the layout to make the two areas closer.
2. Temporarily keep materials or semi-finished products on side tables or in spaces located before and after each work station as "buffer stock". Buffer stock allows workers to work at their own pace.
3. Adjust the work heights of workstations and buffer stock to the same level. This helps home workers reduce unnecessary bending postures, e.g. from standing to bending and/or from bending to standing.

WAY TO PROMOTE COOPERATION

Home workers in the same workplace can work together to create smooth work flow. Assign one day or half a day for joint layout changes. All the home workers should exchange ideas on a more productive workplace layout. Relocate some workstations for smoother workflow. These changes do not cost much. Everybody will certainly share benefits in safety and productivity.

SOME MORE HINTS

- Ensure that the place for products is separate from that for raw materials. In a limited working space of home workers, products are often mingled with raw materials. It decreases productivity.
- A mobile, wheeled rack will be useful to temporarily place bigger semi-products or products, especially in a narrow workplace. This will create smooth movements of such materials and products.
- For smaller materials and parts, use small containers for buffer stock.

POINTS TO REMEMBER

Simple layout changes can improve the work flow and increase productivity.



Figure 90: Work at the same working height to improve the flow of work and eliminate extra tasks.

Figure 91: Using buffer stock, home workers can work at their own pace. Buffer stock allows workers to keep unfinished materials before they go to the next process.

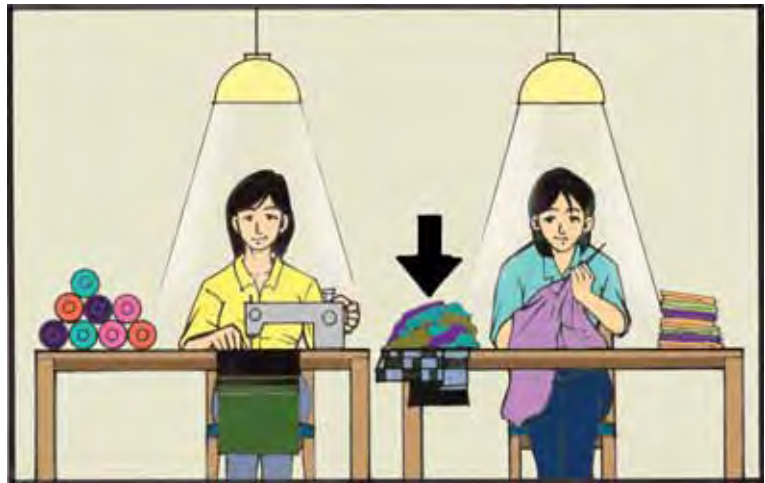


Figure 92: Extend the work area for better layout and workflow.



WISH Programme

Improving safety, health and work conditions among home workers in the informal economy is an important component of the ILO agenda to extend decent work to all workers. In many countries, people get their job and income opportunities from a range of home manufacturing operation such as clothes, shoes, furniture, handcrafts, or foods. Although machines, chemicals and other production materials are brought into home workplaces, home workers have very little access to safety and health protection.



The WISH (Work Improvements for Safe Home) action manual is designed to provide home workers with practical, easy-to-implement ideas to improve their safety, health and working conditions. These improvements will also contribute to higher productivity and efficiency of their work and promote active participation and cooperation of home workers in the same workplace or in the same community. The manual reflects the practical experiences in the home worker training in Cambodia, Mongolia, and Thailand carried out within the framework of the ILO's Informal Economy, Poverty and Employment Project with the financial support from the Government of the United Kingdom.

ISBN 92-2-119080-3 & 978-92-2-119080-6