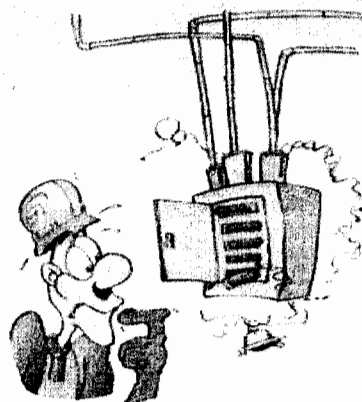




Do Your Part Be Safety Smart

**Disconnect
Before You
CORRECT**

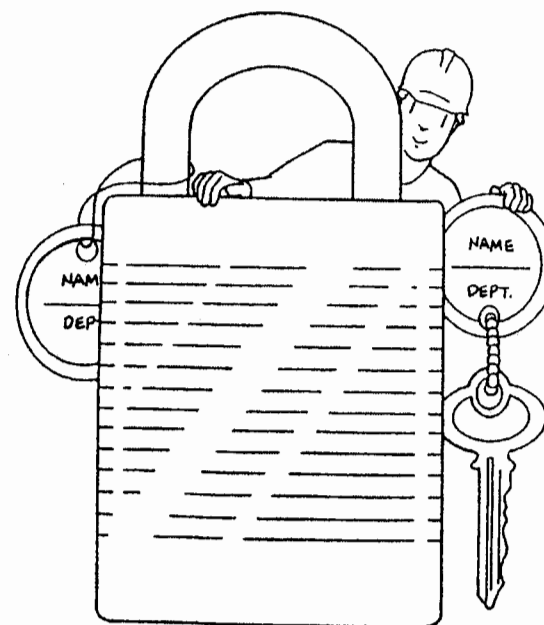


FAUJI FERTILIZER COMPANY LIMITED

Mirpur Mathelo, District Ghotki, Sindh



ABOUT LOCKOUT / TAGOUT



HSE DEPARTMENT

WHAT IS LOCKOUT/TAGOUT ?

It's putting equipment into a temporary condition in which all power is blocked.

LOCKOUT/TAGOUT INVOLVES

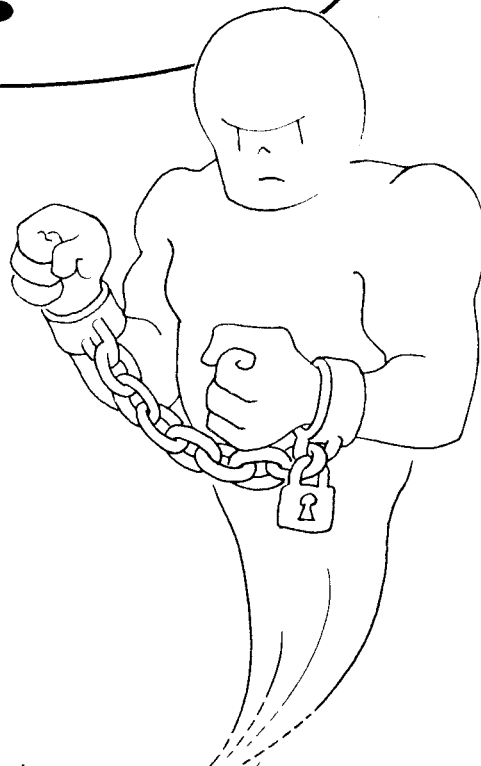
much more than disconnecting the power source. It means blocking or de-energizing ALL POSSIBLE SOURCES OF MOTION.

YOUR EMPLOYER DECIDES

whether to use locks or tags:

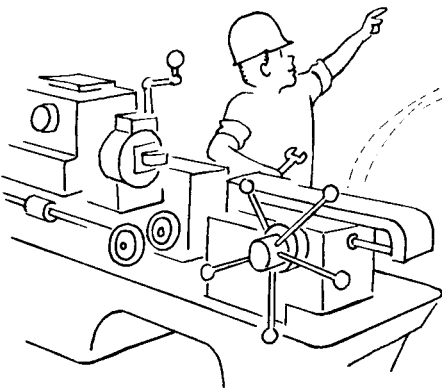
LOCKS physically prevent the use of equipment in which energy hazards exist.

TAGS provide warnings to alert workers to the status of the equipment.



Lockout/tagout protects against unexpected movement.

This booklet is not a substitute for standards issued by the Occupational Safety and Health Administration (OSHA) or for your employer's instructions.



WHY IS IT IMPORTANT ?

Because
**LOCKOUT/TAGOUT
HELPS PREVENT
ACCIDENTS.**

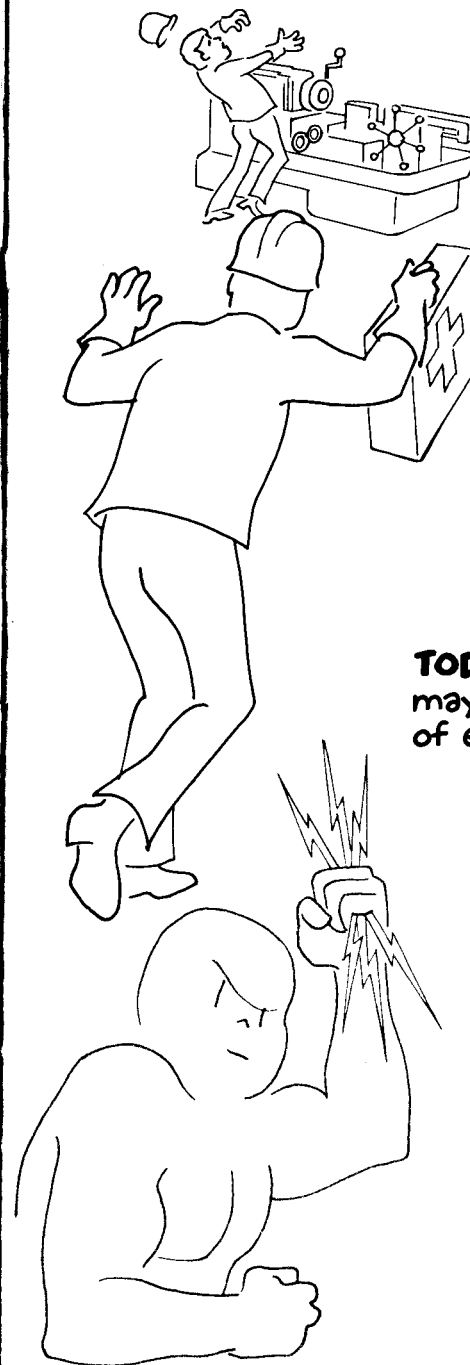
TODAY'S COMPLEX EQUIPMENT may be powered by several kinds of energy. For example:

- electrical power
- stored mechanical energy, such as in springs
- stored pressure, such as pressurized air, oil or other fluid
- stored electrical energy, such as in capacitors.

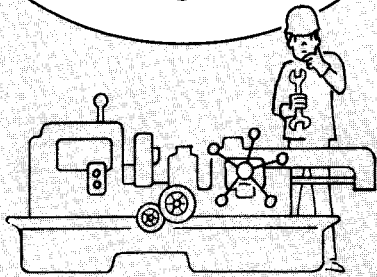
TO PROTECT YOURSELF AND OTHERS

from serious injury – even death – you need to know:

- how the equipment you're working on is powered
- when, why and how to lock or tag it out.



HOW DO ACCIDENTS HAPPEN?

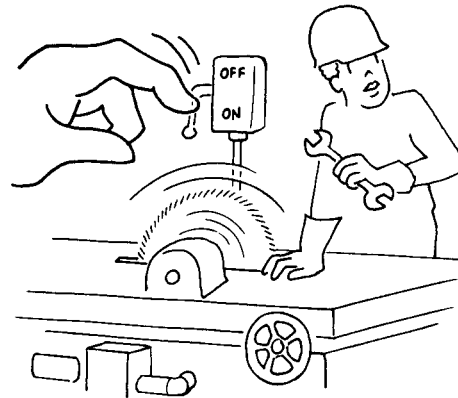


They can happen any time you place any part of your body within range of machine parts that move.

If unexpected mechanical action takes place, it can:

CUT YOU

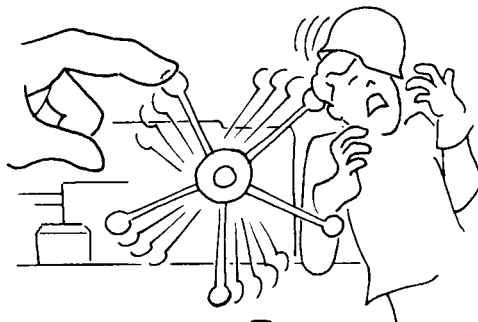
For example, if a saw suddenly starts up, it could cut off a limb.



STRIKE

you unexpectedly.

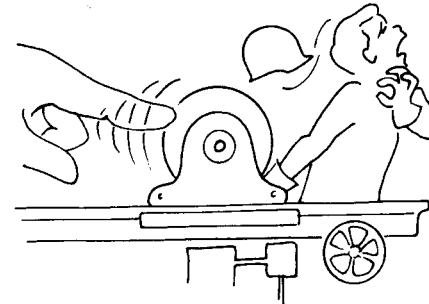
For example, flywheels or movable machine parts that haven't stopped moving (or start moving by accident) could hit you and cause injury.



CRUSH

your limbs between moving parts.

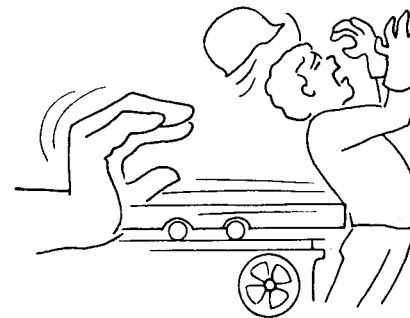
For example, you could be caught and crushed in a rolling mill or calender that suddenly starts up when you're in the way.



PUSH

you away with force.

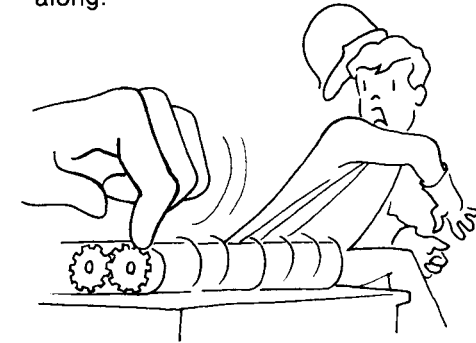
For example, a machine part that isn't secured could move suddenly and hurt you badly.



ENTANGLE

your clothing on your body.

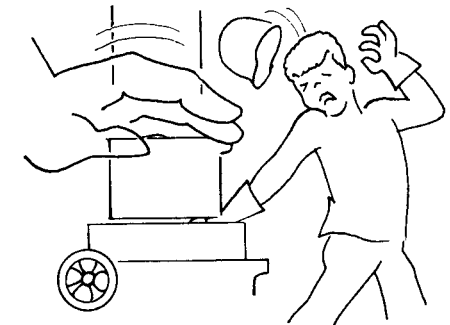
For example, a conveyor belt or pulley that starts unexpectedly could catch you and drag you along.



CLAMP DOWN

on you from above.

For example, a drop-forging hammer that isn't blocked could fall on your hand and cause injury.



LOCKOUT OR TAGOUT PREVENTS ALL MOVEMENT
-- and prevents injuries.

Learn more...

WHEN

should equipment
be locked or
tagged out
?

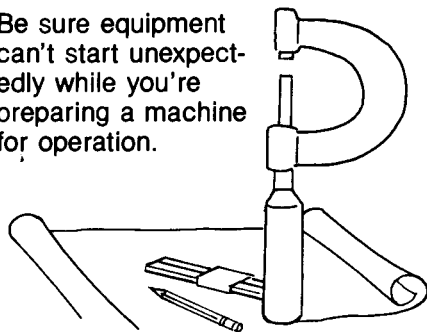


BEFORE you remove or bypass a guard or other safety device, or get any part of your body into a possible danger zone.

For example:

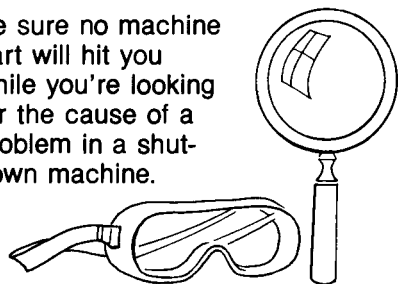
DURING SET-UPS

Be sure equipment can't start unexpectedly while you're preparing a machine for operation.



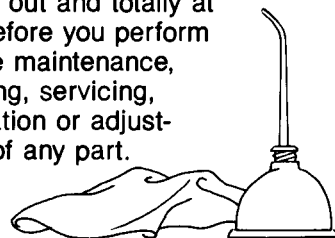
WHILE TROUBLE-SHOOTING

Be sure no machine part will hit you while you're looking for the cause of a problem in a shut-down machine.



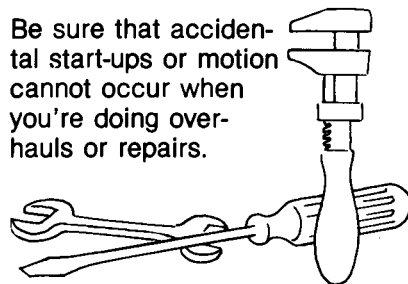
BEFORE PERFORMING MAINTENANCE

Be sure the machine is locked out and totally at rest before you perform routine maintenance, cleaning, servicing, lubrication or adjustment of any part.



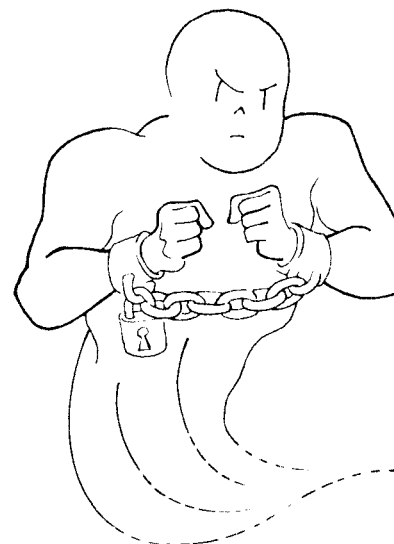
BEFORE MAKING REPAIRS

Be sure that accidental start-ups or motion cannot occur when you're doing overhauls or repairs.



WHAT EQUIPMENT

should be locked
or tagged out
?



ALL MECHANICAL EQUIPMENT which is capable of sudden, unexpected movement.

For example:

FORGING EQUIPMENT

— such as mechanical or hydraulic presses and hammers

POWER PRESSES

— especially those with multiple pressure sources

PIPING SYSTEMS

— such as process systems in which substances are subjected to heat and/or pressure

MILLING EQUIPMENT

— such as grinding, stamping and polishing machines

WOODWORKING EQUIPMENT

— such as saws, jointers, planers and sanders

HOISTING EQUIPMENT

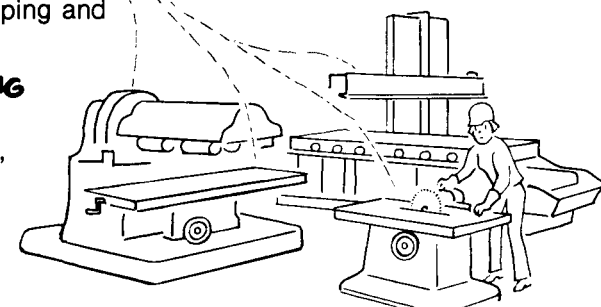
— such as derricks and cranes

LOCKS SHOULD BE USED WHENEVER POSSIBLE

However, if equipment is not capable of being locked out, warning tags may be used. Check with your supervisor for specific instructions.

ELECTRIC CIRCUITS AND EQUIPMENT

Avoid electrocution! Take required steps for disconnecting electrical power and locking and/or tagging circuits and equipment.



HOW TO LOCK OUT OR TAG OUT EQUIPMENT

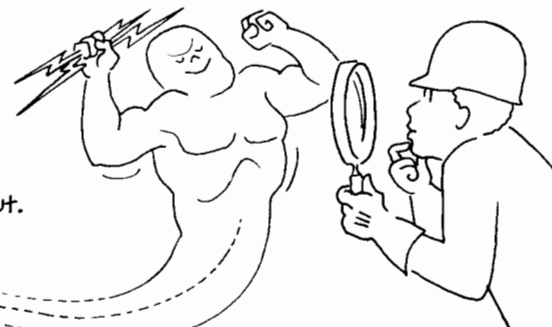
There are 8 basic steps. (Since every machine is different, you should follow specific instructions for locking or tagging out each separate piece of equipment.)



3

IDENTIFY ALL ENERGY SOURCES

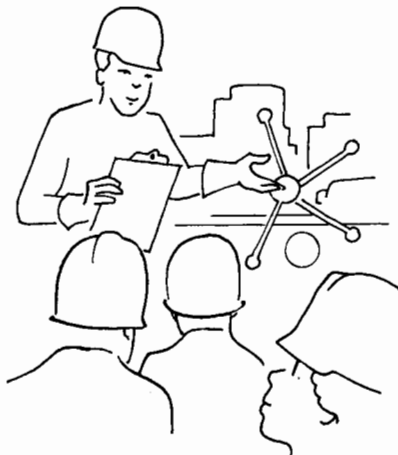
Both kinetic energy (energy in motion) and potential energy (stored energy) must be locked or tagged out.



1

NOTIFY OTHERS

All employees who use the equipment should know that it and its electric power source will be locked or tagged out, and why. This is especially important if the work is to be done in isolated areas. Employees working nearby or in areas hidden from view should also be notified.



2

REVIEW THE ENTIRE LOCKOUT OR TAGOUT PROCEDURE

Before you start, think through every required step and double-check everything. For example:

- Compare shut-down and work authorizations. Is the correct system being locked or tagged out and worked on?
- Are all switches labeled correctly so the right ones can be locked or tagged out?
- Are there any related systems that need to be shut down?
- Are all workers wearing required personal protective equipment?



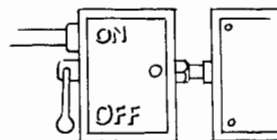
CHECK ALL POWER SOURCES



Look for:

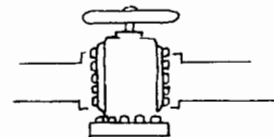
ELECTRICAL CIRCUITS

Electricity is the primary energy source for many machines.



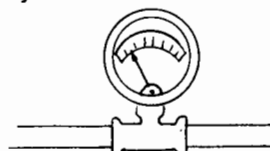
HYDRAULIC SYSTEMS

Some machine parts are moved by pressurized fluids in pipes or hoses.



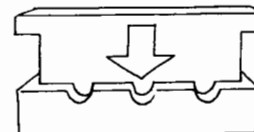
PNEUMATIC SYSTEMS

Compressed air, steam or gases stored in tanks, pipes, hoses, etc., may power machines and piping systems.



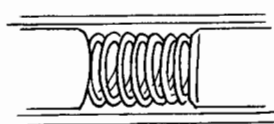
GRAVITY SYSTEMS

Some mechanical cycles rely on gravity to bring down suspended parts.



SPRING ENERGY

Springs in tension or compression contain potential energy that can provide mechanical power.



4

SHUT DOWN THE EQUIPMENT

If the machine is on, shut it down by the usual means (push "stop" button, flip "off" switch, etc.).

5

DISCONNECT THE POWER

For example, use a manually-operated circuit breaker or line valve to physically isolate the equipment from its primary power source.

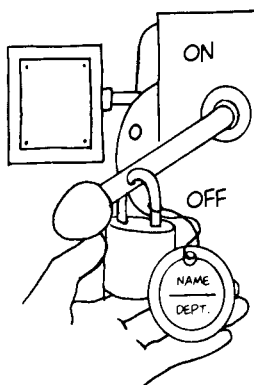
6

LOCK OUT OR TAG OUT THE EQUIPMENT

This will help prevent anyone from accidentally starting it.

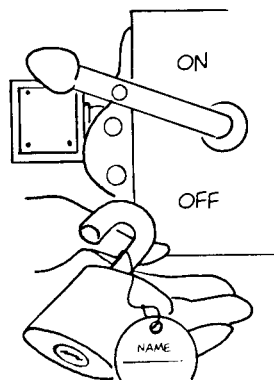
ATTACH LOCKS OR TAGS

to electrical controls and the means used to disconnect electric circuits and equipment, bleeder valves on pneumatic and hydraulic lines, etc.



DON'T REMOVE A LOCK OR TAG

unless you're the person who attached it.



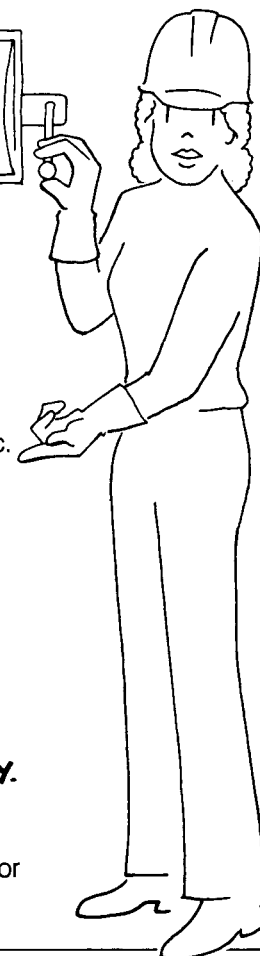
A NOTE ABOUT LOCKS

- USE YOUR OWN LOCK. It should be labeled with your name and department. There should be no duplicate key for it.
- DON'T LEND your lock and key to anyone.
- REPORT LOSS of lock or key immediately.

7

NEUTRALIZE OTHER ENERGY

Stored energy that hasn't been neutralized could set equipment in motion!



To prevent this:

- ✓ **LOWER ALL SUSPENDED PARTS**
to lowest (rest) position whenever possible.
- ✓ **BLOCK MOVABLE PARTS**
that might be affected by gravity or other forces. Use the proper chain, bracket, pin, etc.
- ✓ **VENT AIR PRESSURE FROM PNEUMATIC LINES,**
pressure reservoirs, accumulators, air surge tanks, etc. If pressure can't be relieved, block any possible movement.
- ✓ **DRAIN OR BLEED HYDRAULIC LINES**
to remove pressure.
- ✓ **RELEASE OR BLOCK SPRING ENERGY.**
- ✓ **SECURE MACHINE PRODUCTS**
to be sure they can't move, fall unexpectedly or cause machine movement.

WAIT FOR ALL MOVING PARTS TO STOP

before you enter a danger zone. Review the entire cycle of the equipment's mechanical motion so you won't be caught by surprise.

NEVER RELY ON SECONDARY PROTECTION

such as a microswitch or limit switch which could malfunction or be bypassed without your knowledge.

TEST EQUIPMENT

NEVER ENTER a danger zone until you're certain no dangerous movement is possible.

REVIEW YOUR CHECKLIST

of specific lock-out/tagout steps to be sure all have been performed.

DOUBLE-CHECK FOR OTHER PEOPLE

who may be in the danger zone.

PUSH START BUTTONS

to verify that power is disconnected. Be sure to return controls to "off" or neutral position after verification.

INSPECT EACH MOVABLE PART

to see if it's at rest.

OPERATE VALVES

to be sure no equipment part will be moved by pressure.

TEST THE ELECTRIC CIRCUIT

to make sure all power is off.

PERFORM ANY OTHER TESTS

specifically recommended for your equipment.

IF YOU MUST LEAVE SOME POWER ON, keep clear of the danger zone by using extension tools to do the required work.



BEFORE RESTARTING EQUIPMENT, DOUBLE-CHECK EVERYTHING

Notify your supervisor about any damaged or missing part or any potential hazard before restarting equipment.

✓✓ EQUIPMENT

Is it all in operating condition, properly lubricated, adjusted, set up, etc.?

✓✓ GUARDS

Are they all in place?

✓✓ TOOLS

Have any been left behind in the machine?

✓✓ BRACES, PINS, BLOCKS, CHAINS

Have they all been removed?

✓✓ PRESSURE TUBING, PIPES, HOSES

Are they all connected, with valves closed?

✓✓ WORK AREA

Is it clear for proper mechanical operation?

✓✓ PERSONNEL

Is it certain that all workers have left danger zones?

✓✓ PERSONAL PROTECTIVE EQUIPMENT

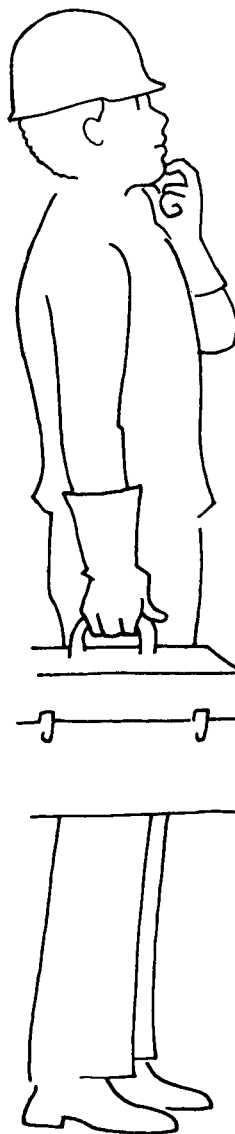
Is everyone wearing his or her required gear for normal operation?

✓✓ TAGS AND LOCKS

Have they been removed by authorized persons?

Be alert for possible movements that may take place as power is returned to equipment, movable parts are unblocked, etc. -- even if equipment is turned off.

Notify affected employees that the lockout or tagout devices have been removed, and that the equipment is ready for use.



A NOTE TO ALL EMPLOYEES

Tampering with equipment that has been locked or tagged out can create serious hazards.

DO NOT REMOVE,
cover or alter
warning tags on
any part of any
equipment.

DO NOT BYPASS
or remove locks
placed by another
employee.

DO NOT ENTER
areas where machines
have been locked or
tagged out unless
you're authorized
to do so.

**DO NOT
TRY TO START**
equipment that's locked
or tagged out unless
you've been authorized
to do so.



**LOCKOUT/TAGOUT CAN PROTECT YOU
AND YOUR CO-WORKERS!**

TEST YOUR KNOWLEDGE

about lockout/tagout.

- ❶ Equipment should be locked or tagged out before you remove or bypass a guard or other safety device, or get any part of your body into a possible danger zone. True ☐ False ☐
- ❷ Pushing a "stop" button is the same as disconnecting the power. True ☐ False ☐
- ❸ A compressed spring is an example of stored energy. True ☐ False ☐
- ❹ Once the electricity is off, it's safe to work on the equipment. True ☐ False ☐
- ❺ Raising suspended parts to their highest position neutralizes their energy. True ☐ False ☐
- ❻ Stored energy can make machine parts move unexpectedly. True ☐ False ☐
- ❼ If a machine can't be locked out, warning tags may be used. True ☐ False ☐
- ❽ Only employees who actually use the equipment need to be notified when equipment is locked or tagged out. True ☐ False ☐
- ❾ You must review the entire lockout or tagout procedure before you start. True ☐ False ☐
- ❿ After locking or tagging out equipment, you must verify that power is disconnected by pushing start buttons. True ☐ False ☐

I have read the booklet, "About Lockout/Tagout."

Employee's signature _____

Date _____

ANSWERS TO QUIZ

1. True 2. False 3. True 4. False 5. False 6. True 7. True 8. False 9. True 10. True