

tically eliminate the fire hazard and the danger of burns from accidental contact. Ordinary metal covering on wood tables is not sufficient because the metal conducts heat and may ignite the wood below.

Holders should be designed so that employees cannot accidentally touch the hot irons if they reach for them without looking. The best holder completely encloses the heated surface and is inclined so that the weight of the iron prevents it from falling out. Also see NSC Data Sheet 445, *Hand Soldering and Brazing*.

Harmful quantities of fumes from lead soldering should not be allowed to accumulate. Local regulations may require exhaust facilities if much lead soldering is done. Even if lead fumes are not present in harmful quantities, it may be desirable to exhaust the nuisance fumes and smoke. Air samples should be taken to verify that the amount of lead in the air is not harmful.

Lead solder particles should not be allowed to accumulate on the floor and on work tables. If the operation is such that the solder or flux may spatter, employees should wear face shields or do the work under a transparent shield.

Air power tools

Air hose. An air hose presents the same tripping or stumbling hazard as do cords on electric tools. Persons or material accidentally hitting the hose may unbalance the operator or cause the tool to fall from an overhead place. An air hose on the floor should be protected against trucks and pedestrians by two planks laid on either side of it or by a runway built over it. It is preferable to suspend hoses over aisles and work areas.

Workmen should be warned against disconnecting the air hose from the tool and using it for cleaning machines or removing dust from clothing. The federal safety and health regulations mandate that air pressure in excess of 30 psig must not be used for cleaning machines, and then only with effective chip guarding and personal protective equipment such as safety glasses. Brushing or vacuum equipment is recommended for removing dust from clothing.

Accidents sometimes occur when the air hose becomes disconnected and whips about.

A short chain attached to the hose and to the tool housing will keep the hose from whipping about if the coupling should break. In some cases, couplings should also have such chains between the sections of hose.

Air should be cut off before attempting to disconnect the air hose from the air line. Air pressure inside the line should be released before disconnecting.

A safety check valve installed in the air line at the manifold will shut off the air supply automatically if a fracture occurs anywhere in the line.

If kinking or excessive wear of the hose is a problem, it can be protected by a wrapping of strip metal or wire. One objection to armored hose is that it may become dented and thus restrict the flow of air.

Air power grinders require the same type of guarding as electric grinders. Maintenance of the speed regulator or governor on these machines is of particular importance in order to avoid over-speeding the wheel.

Regular inspection by qualified personnel at each wheel change is recommended.

Pneumatic impact tools, such as riveting guns and jackhammers, are essentially the same in that the tool proper is fitted into the gun and receives its impact from a rapidly moving reciprocating piston driven by compressed air at about 90 psig pressure.

Noise levels from pneumatic impact tools should be determined to see if hearing protective devices for workers are necessary to comply with the 90 dBA requirement of federal standards.

Two safety devices are required. The first is an automatically closing valve actuated by a trigger located inside the handle where it is reasonably safe from accidental operation. The machine can operate only when the trigger is depressed.

The second is a retaining device that holds the tool in place so that it cannot be fired accidentally from the barrel (Fig 35-27).

A good safety rule to impress on all operators of small air hammers is—Do not squeeze the trigger until the tool is on the work.

In the use of all pneumatic impact tools there is, of course, a hazard from flying chips.