Control of Hazardous Energy (Lockout/Tagout)

PURPOSE

This document applies to new “turn-key” equipment purchased by Bosch Farmington Hills, Plymouth and South Bend facilities.

USE

The application of this specification will result in the reduction or elimination of serious injuries and fatalities in the workplace. The Lockout/Tagout Placard will assist Bosch associates in identifying the following:

- Types of energy sources.
- Lockout points.
- Methods to lock out, isolate, and control hazardous energy.
- Methods of verifying energy control.
- Existence of unique energy sources.

The Lockout/Tagout Placard, see Figure 1, should be consulted prior to performing lockout. Note all energy sources, type, magnitude, and procedures, including stored energies. Do not use the lockout procedures as equipment shutdown sequences. Follow all manufacturer recommended shutdown procedures before attempting lockout. It is necessary to allow all motors, cylinders, slides, etc., to come to rest prior to performing lockout procedures. For example, electrical disconnect switches are not designed to break motor loads. Motors should be stopped using the properly designed start/stop devices prior to opening any disconnect switches.

ENERGY SOURCES

Primary energy sources are the various areas where power such as electricity, pressurized gas, pressurized fluid, etc., enters the equipment and has an appropriate lockable device for disabling that energy from the equipment. For example, most 480 voltage power sources have a lockable disconnect switch. Likewise, compressed air sources have a lockable shutoff valve that should also vent pressurized air from machine circuits. Primary energy sources are identified on the Lockout/Tagout Placard as main lockout points.

A secondary energy source is a source of energy which is in series with and downstream from a primary energy source and is controlled by the primary energy source. Secondary lockout points are used to isolate a specific component of a system without the necessity of locking out the entire system.

DEVELOPING THE LOCKOUT/TAGOUT PLACARD

There are four major areas that must be addressed in all

- General Information
- Primary Machine Energy Source and Lockout/Tagout
- Associated/Adjacent Machine Energy Source Data
- Machine Layout

LOCATING PLACARDS, TAGS AND PLATES

Proper and effective locating of Control of Hazardous Energy (Lockout/Tagout) Program placards, tags and plates can generally be accomplished by following a few common sense guidelines:

- To be effectively used, placards, tags and plates must be as visible as possible.
- Placards must be physically attached to the machine/system. Typically, this would be on the door of a machine/system's main electrical (or other primary energy) enclosure as close to the main disconnect or shutoff as possible.

• Energy source identification tags, to be effective, must be located as close as physically possible to their associated disconnect or shutoff device without interfering with the operation of that device. This is especially important when multiple shutoff devices are in close proximity to each other.
• Energy information plates help to clarify the purpose of their associated tag. If they are to be of value they should be in a position on the machine/system where they are both easily read and easily associated with their corresponding tag.
• These tags must be carefully located so as to warn personnel of the presence and location of the danger without putting them in harm's way. If an energy hazard is accessible from more than one point of entry, then the hazard must be identified at all points of entry.
The most important consideration in avoiding problems is accurate placement of the energy source identification tags. An incorrectly identified energy source is just as dangerous, if not more so, as an unidentified one. Installers of these tags must be very careful to ensure that placement is correct.

ATTACHING PLACARDS AND ENERGY SOURCE TAGS

To meet Bosch requirements, all placards must be securely attached to the equipment electrical or other primary energy enclosures. Placards are to be mounted so that they lie flat on the mounting surface without wrinkling or bowing. Two-sided foam tape or other adhesives are acceptable for attaching placards. Lockout placards that are installed on fencing, railing, conduit, or piping must be fastened by using UV resistant nylon wire ties
• All tags mounted to electrical enclosures, remote and lighting disconnects, consoles, panels and other reasonably flat surfaces must be attached using two-sided foam tape or other adhesives acceptable for attaching tags and plates to these surfaces.
• When attaching tags to pipes, fencing, railing or other irregular surfaces, the recommended procedure for installation is to use black nylon wire ties meeting the description above, appropriately sized chain or braided safety cable. Alternative drilling and larger holes may be required to facilitate mounting.
• In all cases, the tags must be attached to the equipment in such a way that they are not removable except with excessive force (cutting) and do not interfere with the operation of the equipment.

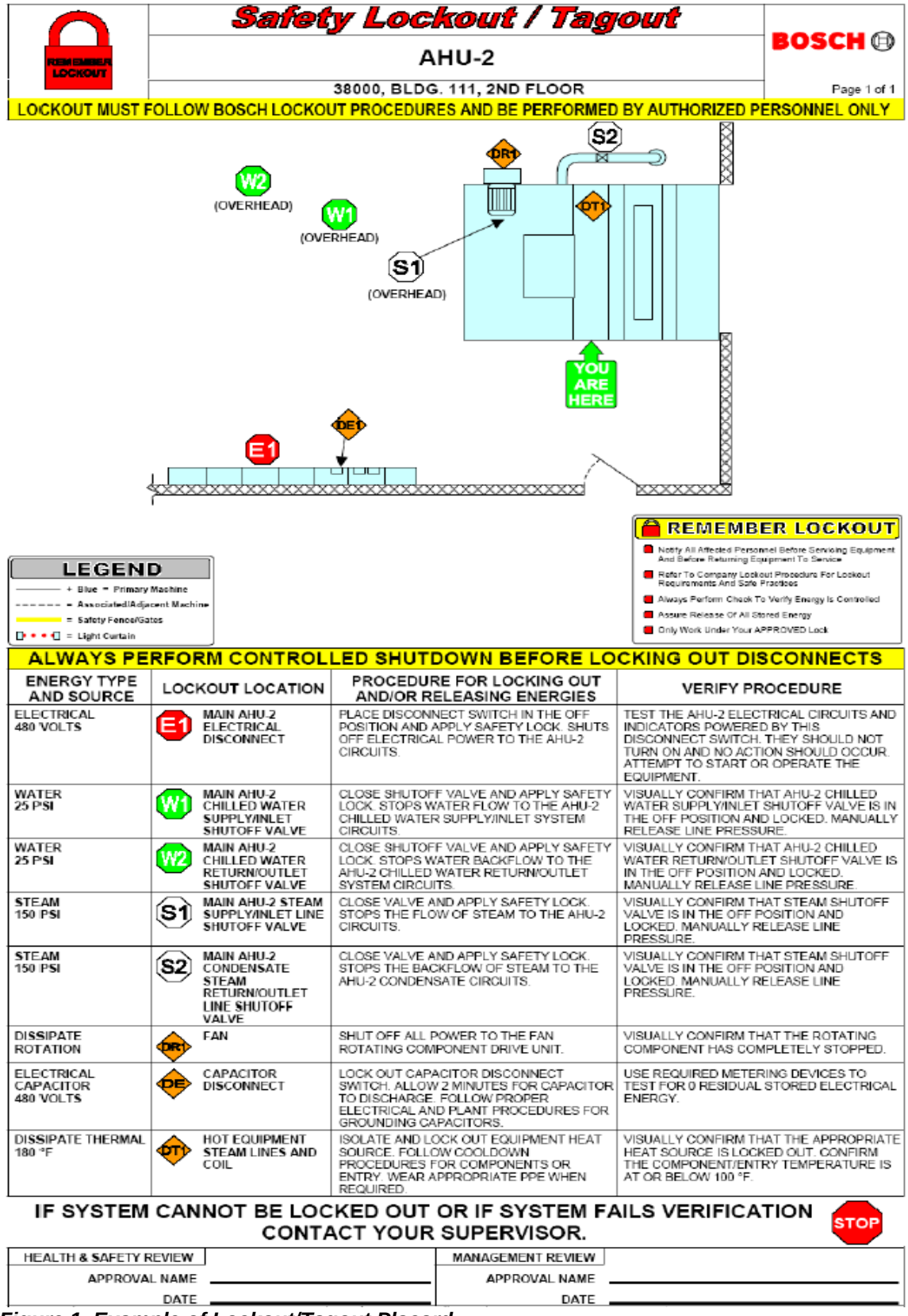

Figure 1. Example of Lockout/Tagout Placard