



Enable safer machine interventions

Lockout/Tagout Guide Book

Why this Guide?

Lockout/Tagout prevents workplace accidents by completely and temporarily isolating machinery from its energy sources. When implemented well, it stops machine movement and machine energisation while interventions are ongoing.

Use this guide for ideas on how to implement or strengthen your Lockout/Tagout programme, or contact us for answers to any questions you may have.



Brady offers a complete Lockout/Tagout solution, used by many manufacturers worldwide, to maximise workplace safety and protect their employees.

Contents

- 2 Introduction to Lockout/Tagout
- 11 Lockout/Tagout in 6 steps
- 18 Lockout/Tagout Services
- 23 Lockout/Tagout Tools
- 32 Checklists



What is Lockout/Tagout?

Lockout/Tagout is a safety procedure that temporarily isolates machinery from all energy sources, and that secures this de-energised state while machine interventions are ongoing. It enables safer machine interventions and helps avoid accidents caused by moving parts or premature machine energisation.



Lockout/Tagout benefits

Lockout/Tagout is successful when approached as a comprehensive safety programme. Best practices require employee training, illustrated machine-specific procedures, and the right tools. Benefits include:

Save lives

Prevent incidents, injuries and fatal accidents

Increase efficiency

Reduce unplanned downtime generated by workplace accidents

Cut costs

Decrease lost employee time, insurance costs and potential fines





“A co-worker dies,
and 160 others have a
workrelated accident,
every 15 seconds.”

International Labour Organisation

One person, one lock, one key

The main principle of Lockout/Tagout is “one person, one lock, one key”. Every padlock in a Lockout/Tagout programme has a unique key, which is kept by the person intervening on a machine. This effectively enables relevant employees to protect their own safety. Master and Grandmaster keys are possible, however their use is best restricted and usually part of strict procedures performed by Safety or Site managers.



Group lockouts

Even during larger machine interventions, involving several professionals, multiple teams, or shift changes, the Lockout/Tagout principle is protected with work authorisation permits and tools that make sure machine energisation is not possible before every person has finished their work. Working under someone else's lock is to be avoided as it provides a false sense of security.



Safer maintenance in explosive atmospheres

To enable safer maintenance in explosive atmospheres, Lockout/Tagout solutions exist that have been tested in alignment with Directive 2014/34/EU and Directive 1999/92/EU.



Standards & regulations



European Union

- Directive 2009/104/EC specifies minimum safety and health requirements for using equipment at work

EU members



Austria

- AschG –ArbeitnehmerInnenschutzgesetz
- AM-VO – Arbeitsmittelverordnung 1 §17



France

- UTE C18-50
- ED 6109 - INRS Best practice document November 2011



Germany

- Betriebssicherheitsverordnung 2015



Italy

- Direttiva 2001/45/CE



Spain

- REAL DECRETO 1215/199



Switzerland

- UVG – Federal Law on Accident Insurance VUV
- EKAS Guideline no. 6512 – Work Equipment



United Kingdom

- BS 7671:2008, Regulation 19 – Isolation from Sources of Energy



United States of America

- OSHA 29CFR 1910.147: Control of Hazardous Energy
- OSHA 29CFR 1910.333: Electrical Safety
- ANSI Z244.1-2003: Lockout/Tagout and Alternative Methods



International

- ISO 14118 standardises the prevention of hazardous equipment re-energising.

Lockout/Tagout in 6 steps

Now, where to begin? 6 key elements will enable your Lockout/Tagout programme to keep your workers safe.

1. Create a Lockout/Tagout policy
2. Establish machine specific procedures
3. Identify energy isolation points
4. Lockout/Tagout Training
5. Provide proper Lockout/Tagout tools
6. Sustain the Lockout/Tagout programme



1. Create a Lockout/Tagout policy

The first step to Lockout/Tagout success is developing and documenting an equipment energy control policy. A written lockout policy document establishes and explains the elements of your Lockout/Tagout programme.

It's important to take into account international standards, relevant laws, industry regulations, and your specific working environment to create a highly relevant procedure. Best practices call for a collaborative effort from all relevant organisational levels, and for an annual review that keeps the policy up-to-date.



2. Establish machine specific procedures

Lockout procedures should be formally documented and clearly identify the equipment covered. They should detail the specific steps necessary for shutting down, isolating, blocking and securing equipment to control hazardous energy, as well as steps for the placement, try-out, removal and transfer of Lockout/ Tagout tools.

Brady Safety Engineers can help create best practice machine specific lockout procedures, including photos of relevant energy isolation points.



3. Identify energy isolation points

Locate and identify all energy isolation points — valves, switches, breakers and plugs — with permanently placed and standardised labels or tags. Keep in mind that these labels and tags should be consistent with the machine-specific Lockout/Tagout procedures from Step 2.

Our Safety Engineers can visit you on-site to help identify all energy isolation points per machine.



4. Lockout/Tagout Training

Adequately train your employees, communicate processes and conduct periodic inspections to ensure your programme is running effectively. Training should not only include relevant legal requirements, but also your own programme elements, such as machine-specific procedures.

Training can be diversified for 3 employee categories (OSHA, US):

- Authorised employees who perform the lockout on machinery and equipment for maintenance.
- Affected employees who use the machinery that is receiving maintenance.
- Other employees who may be in the area where a piece of equipment is receiving maintenance.

Brady offers on-site trainings and a modular Lockout/Tagout training video that can be adapted to the audience.



5. Provide proper Lockout/Tagout tools

When machine-specific procedures are written, and their energy isolation points are identified, the best fitting lockout tools can be selected efficiently.

Brady provides a wide range of Lockout/Tagout tools and devices. Email emea_request@bradycorp.com for a free and complete Lockout/Tagout catalogue.



6. Sustain the Lockout/Tagout programme

Maintain the Lockout/Tagout programme throughout the year to enhance your safety culture. Continuous improvement will enable your company to proactively address safe machine interventions.



Lockout/Tagout Services

Our lockout services are designed to enable safer machine interventions faster, with more confidence, and with less hassle. Our experts help you design a quality lockout programme based on worldwide best practices.

- Energy isolation point identification
- Machine-specific procedure writing
- Key planning and charting
- Padlock customisation

Energy isolation point identification

Brady's expert team of Safety Engineers can help identify all energy isolation points that need to be locked out in order to enable safer machine interventions. These may be buttons, valves, levers and other energy isolation points.

Energy that needs to be locked out can include mechanical, electrical, hydraulic, pneumatic, thermal, gravitational and stored energy, as well as liquids & gaseous chemicals, hot surfaces & substances and equipment that might fall.



Machine-specific procedure writing

Our Safety Engineers can create visually instructive and compliant safety procedures for your sites. Once implemented, you will be able to maintain your programme independently with LINK360 Software.

BRADY LOCKOUT TAGOUT PROCEDURE
29 CFR 1910.147

Developed by: BRADY | Reviewed by: BRADY | Revised by:


Location: Boiler 1
Equipment # B-1
Origin Date: 5/05/09
Asset # 12471

8 **LOCKS & TAGS NEEDED**

DANGER
Steam pressure and burn hazard. Ensure steam and heat have dissipated before proceeding.

APPROVAL DATE: MAY 2011 | MAY 2012 | MAY 2013

South Side of West Boiler along Floor



ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS

ID	Source	Location	Method	Check	Device
E-1	Electrical 288V	Disconnect for Circ. Pump located on North Wall Behind Unit	Move E-1 disconnect Breaker 9 to off. Lock out.	Verify ZERO voltage reading with meter	Lock and Hasp
G-1	Gas Natural Gas Main	Ball Valve Located on South Side of Unit Near West End.	Turn G-1 valve off. Lock out.	Verify pressure has bled off.	Ball Valve Lockout
G-2	Gas Natural Gas Pilot	Ball Valve Located on South Side behind Main Gas Line.	Turn G-2 valve off. Tag out.	Verify pressure has bled off.	Tag
W-1	Makeup Feed Water	Globe Valve Located on South Side behind Main Gas Line.	Turn W-1 valve off. Lock out.	Verify pressure has bled off.	Gate Valve Lockout

CP = CONTROL PANEL | E = ELECTRICAL | W = WATER | P = PNEUMATIC | C = CHEMICAL | V = VALVE | G = GAS | S = STEAM

DANGER OPENING A GUARD DOES NOT CONSTITUTE A LOCKOUT!
Any machine modifications must be shown in procedure. Contact facilities to update procedure.

BRADY Safety Is Your Responsibility! 800-496-4040

Page 1 of 2

Key planning and charting

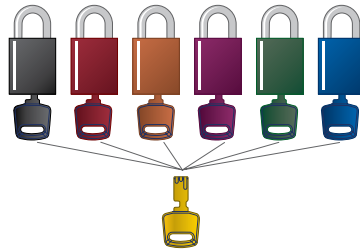
Brady can provide a complete key plan for your specific lockout programme. This key plan will map out keyed different and keyed alike padlocks, as well as master key and grandmaster key hierarchies.

In addition, Brady charts every lock and key combination so you will never receive the same combination twice unless so desired in case the same employee would need a supplementary lock for example.



Keyed alike

Each lock in the group can be opened with the same key.



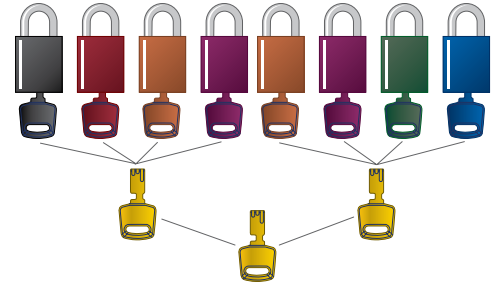
Master keyed

Each group of locks (Keyed alike/Keyed different) can be opened with a master key.



Keyed different

Each lock is opened by its own, unique key.



Grandmaster keyed

A single key can open all locks in the system.

Padlock customisation

To fully support the one person, one lock, one key-principle, Brady offers a complete padlock customisation service.

In addition to padlock colour coding, personalisation is possible:

- by printing*: Print a face or any other personalisation in high resolution directly on the padlock, because safety is personal. The print resists abrasion, chemicals and UV-radiation and can be applied both to the front and back of the padlock

*PrintFace is exclusively available on SafeKey padlocks

- by engraving: Brady offers reliable laser engraving for all our Lockout/Tagout padlocks. Ideal in abrasive and heavy industrial contexts.
- by labelling: Use the labels included with your Lockout/Tagout padlocks. It can include the name of its owner and a phone number or any other information.



Lockout/Tagout Tools

6 Lockout/Tagout tools help you to quickly implement your Lockout/Tagout policy and machine specific procedures on the workfloor.

- Software
- Devices
- Padlocks
- Tags
- Accessories
- Identification Printers



Software

With LINK360™, Brady's Lockout/Tagout software, the process of managing, creating, updating, reviewing, scaling and visualising lockout procedures becomes a matter of clicks. Easily print your procedures and apply them to the right machine, or send them to relevant employee smartphones and tablets for step-by-step procedure compliance with our LINK360 app.



Devices

Brady offers reliable lockout devices for all machine energy isolation points to lock them in the off-position while maintenance is ongoing. Every device can be locked with one or more padlocks, either directly on the device itself, or with support from an accessory. Devices make it impossible to put an energy isolation point in the on-position as long as the padlocks are not removed.



Padlocks

Brady offers unique SafeKey padlocks for Lockout/Tagout that enable more lock & key combinations than any other safety padlock in the market. Our colour-coded locks & keys enable elaborate, future-proof Lockout/Tagout programmes.

Various padlock casings and shackles can be offered to optimise lock reliability and user safety in specific industrial contexts. Some industries, or teams, may require a high abrasion resistance, while others will prefer non-conductive padlocks.



Padlocks dedicated to your environment

Brady offers a wide range of padlock options to maximise their reliability in any industrial context.



Nylon body padlocks

- Non-conductive
- Lightweight & easy to carry
- Key retaining*
- Indoor use

Aluminium body padlocks

- Long-lasting
- Increased security
- Corrosion resistant
- In- and outdoor use

Steel body padlocks

- Heavy duty
- Max corrosion resistant
- Key retaining
- Extreme environment use

*Not all nylon padlocks have a key retaining feature

Tags

Brady supplies customisable Lockout/Tagout tags that can be attached to padlocks. Tags make other employees aware about why a machine is locked out, how long this might take, and who is servicing it so that more information can be asked if necessary.



Accessories

Brady offers a wide range of accessories to support the implementation of Lockout/Tagout. These can be solutions for larger teams or several shifts so they can apply more locks to the same lockout device.

Lockout accessories also include work authorisation permit display cases to bring relevant information to a point of need.



Custom shadowboards

Shadowboards visually organise Lockout/Tagout tools in the workplace and promote efficient tool retrieval, use, and return. They increase the impact of Lockout/Tagout and help make safety top of mind in the workplace, further reducing maintenance risks and accidents.

Brady offers custom shadowboards in various sizes to support efficient distribution of lockout tools in the workplace.

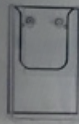
Lockout Tagout Station (L)



GROUP LOCKOUT BOX



DO NOT OPERATE TAGS



VALVE LOCKOUT



GATE VALVE



MULTILOCK



GROUP LOCKOUT BOX



ALL PURPOSE LOCKOUT



GROUP LOCKOUT BOX



LOCK TAG - HASPS



Identification printers

Quickly label any energy isolation point, padlock, device or accessory, and easily print tags and lockout procedures with a quality safety printer.

Brady offers a wide range of industrial grade sign and label printers with label design software that also enable safety sign, pipe marker and floor marker printing.



The background features several overlapping black-outlined rectangles. A large, stylized red checkmark is drawn across the top two rectangles. A red marker tip is visible on the right side, appearing to have just finished drawing the checkmark. The bottom right corner of the page is a solid grey triangle.

Checklists

The following pages contain 3 checklists to help you determine if your Lockout/Tagout programme is ready.

- 7 steps to safely service a machine
- The Lockout/Tagout Scavenger Hunt
- Lockout/Tagout Maturity Model

7 steps to safely service a machine

When locking out a piece of equipment, it is essential to follow these 7 steps in order to be compliant and safe:

1. Notify affected employees of your intent to lock out the equipment
2. Review the written lockout procedure
3. Perform the normal machine stop
4. Shut off all energy isolation controls
5. Lock out the energy isolation controls
6. Dissipate any stored or residual energies
7. Verify the zero-energy state to safely begin servicing



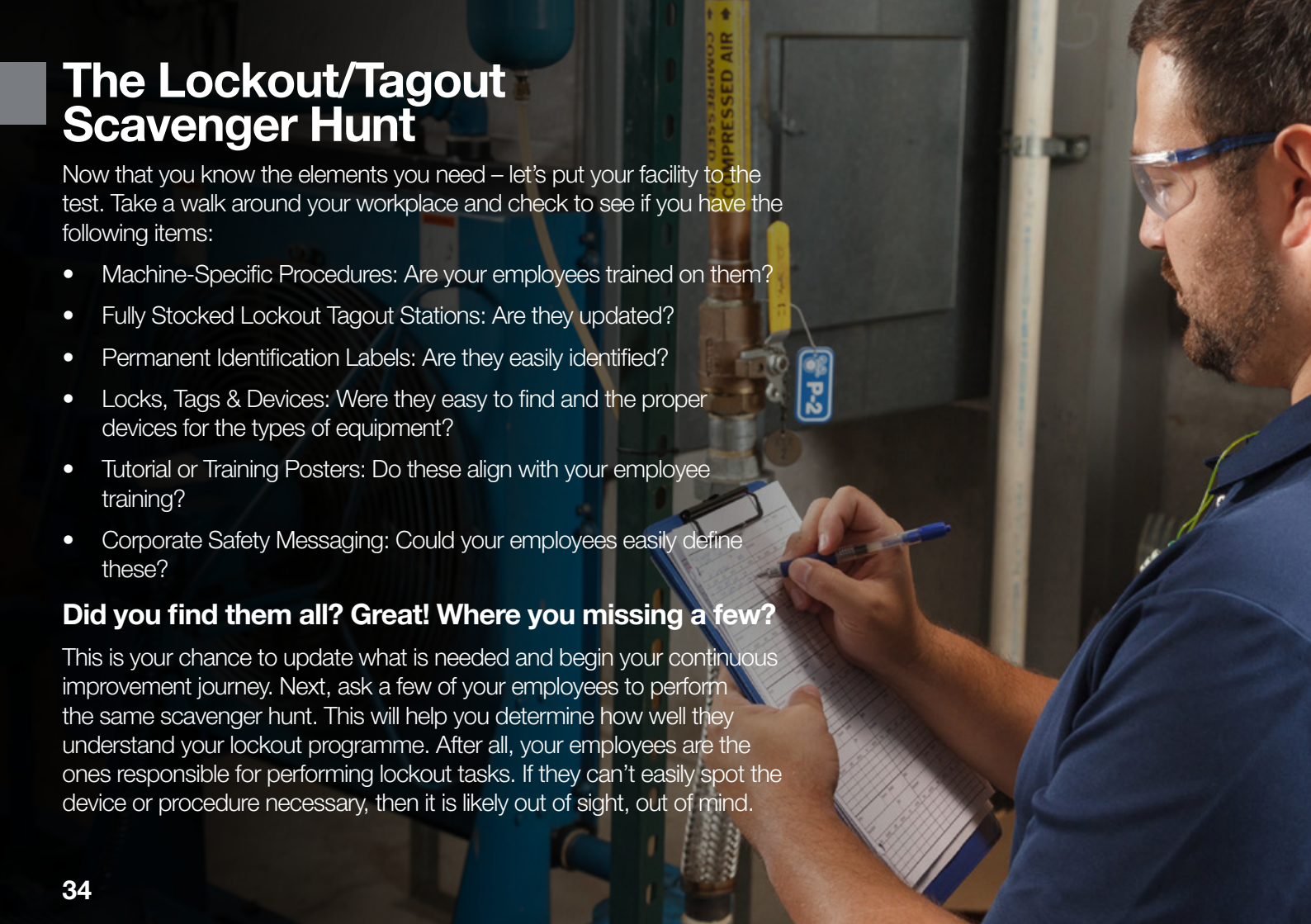
The Lockout/Tagout Scavenger Hunt

Now that you know the elements you need – let's put your facility to the test. Take a walk around your workplace and check to see if you have the following items:

- Machine-Specific Procedures: Are your employees trained on them?
- Fully Stocked Lockout Tagout Stations: Are they updated?
- Permanent Identification Labels: Are they easily identified?
- Locks, Tags & Devices: Were they easy to find and the proper devices for the types of equipment?
- Tutorial or Training Posters: Do these align with your employee training?
- Corporate Safety Messaging: Could your employees easily define these?

Did you find them all? Great! Where you missing a few?

This is your chance to update what is needed and begin your continuous improvement journey. Next, ask a few of your employees to perform the same scavenger hunt. This will help you determine how well they understand your lockout programme. After all, your employees are the ones responsible for performing lockout tasks. If they can't easily spot the device or procedure necessary, then it is likely out of sight, out of mind.



Lockout/Tagout Maturity Model

To check how far your facility has pushed safer machine interventions with Lockout/Tagout, Brady developed a maturity model based on best practices and observations in the field.

	Stage 1	Stage 2	Stage 3
1. PROGRAMME/ POLICY	"We do not have a written programme, but we have a general, site-based policy that my employees use to lockout their equipment."	"We have a site-based programme and machine-specific lockout procedures. Procedures are stored in an Excel file and the policy is posted around the plant."	"We have a corporate policy and documented machine specific procedures. Both are posted for our employees to reference. Our protocols are reviewed regularly to ensure compliance."
2. PROCEDURES	We rely on a site-based lockout procedure, which can be accessed by employees. I'm unsure if adjustments have been made recently."	"We have machine specific procedures that were developed internally and can be accessed by employees. Anytime a procedure is audited, we add new equipment procedures as needed."	"Our machine specific procedures include both written and visual components. They are posted close to the respective piece of equipment. New equipment is never energised before a new procedure is drafted."
3. ISOLATION POINTS	"Some points are identified and labelled, others aren't. It really depends upon the machine."	"Most energy isolation points are labelled or tagged."	"All energy isolation points are tagged and referenced in the machine-specific procedure."
4. TRAINING	"We do not have a standard training programme. Current operators train new ones on the procedure. We don't worry about contractors."	"Employees and contractors receive an orientation on the overarching company safety policy and the site-based procedures, including a lockout device training. This training is documented."	"All new, transferred and contracted employees receive the orientation. We specified training tracks for affected and authorised employees, which include a hands-on lockout device module. Training is logged and I receive prompts when retraining is required."
5. DEVICES	"We have a number of lockout devices and we use whatever fits. We do not maintain a list of equipment and lockout devices needed."	"When our procedures were written, we received product suggestions and purchased accordingly. We maintain a spreadsheet of what equipment is used and what lockout device is needed."	"Tools needed to lock out a machine are visually documented next to every machine. We use an asset management system and have lockout stations in key positions in the facility."
6. SUSTAINABILITY	"We haven't made any adjustments to our procedures or lockout programme since they were created. "	"We audit our procedures and update our programme in the event of an issue or incident."	"The programme is tracked continuously and audited yearly. New equipment is always incorporated into the company policy and a machine-specific lockout procedure is drafted."

Africa

Randburg, South Africa
Tel: +27 11 704 3295
africa@bradycorp.com

Benelux

Zele, Belgium
Tel. +32 (0) 52 45 78 11
benelux@bradycorp.com

Central & Eastern Europe

Bratislava, Slovakia
Tel. +421 2 3300 4800
central_europe@bradycorp.com

Denmark

Odense
Tel. +45 66 14 44 00
denmark@bradycorp.com

France

Roncq
Tel. +33 (0) 3 20 76 94 48
france@bradycorp.com

Germany, Austria & Switzerland

Egelsbach, Germany
Tel. +49 (0) 6103 7598 660
germany@bradycorp.com

Hungary

Budaörs
Tel. +36 23 500 275
central_europe@bradycorp.com

Italy

Gorgonzola
Tel: +39 02 26 00 00 22
italy@bradycorp.com

Middle East FZE

Dubai, UAE
Tel. +971 4881 2524
me@bradycorp.com

Norway

Kjeller
Tel. +47 70 13 40 00
norway@bradycorp.com

Spain & Portugal

Madrid, Spain
Tel. +34 900 902 993
spain@bradycorp.com
portugal@bradycorp.com

Sweden, Finland, Baltic States

Kista, Sweden
Tel. +46 (0) 8 590 057 30
sweden@bradycorp.com

Turkey

Istanbul
Tel. +90 212 264 02 20 / 264 02 21
turkey@bradycorp.com

UK & Ireland

Banbury, UK
Tel. +44 (0) 1295 228 288
uk@bradycorp.com

**We identify and protect people,
products and premises.**

www.bradyeurope.com

25.02.2022
EUR-M-797-EN
Y4233940

© 2022 Brady Worldwide inc. All rights reserved

