Pros and Cons of Safeguards Tool

Fixed Guards		
Safeguarding Action	Pros	Cons
• Provides a barrier	• Can be constructed to suit many specific applications • In-plant construction is often possible • Can provide maximum protection • Usually requires minimum maintenance • Can be suitable to high production, repetitive operations	 May interfere with visibility Can be limited to specific operations Machine adjustment and repair often require its removal, thereby necessitating other means of protection for maintenance personnel
Interlocked Guards		
Safeguarding Action	Pros	Cons

• Shuts off or		
disengages power,		
stops the moving		
parts and prevents		
starting of the		
machine when the		
guard is open;		
should require the		
machine to be		
stopped before the		
worker can reach		
into the danger		
area		

- Can provide maximum protection
- Allows access to the machine for removing jams without time consuming removal of the fixed guards
- Requires careful adjustment and maintenance
 - May be easy to disengage

Adjustable Guards			
Safeguarding Action	Pros	Cons	
• Provides a barrier that may be adjusted to facilitate a variety of production operations	 Can be constructed to suit many specific applications Can be adjusted to admit varying sizes of stock 	 Hands may enter danger area — protection may not be complete at all times May require frequent maintenance and/or adjustment The guard may be made ineffective by the operator May interfere with visibility 	
Self-adjusting Guards			
Safeguarding Action	Pros	Cons	

• Provides a barrier that moves according to the size of the stock entering the danger area	• Off-the-shelf guards are often commercially available	provide maximum protection May interfere with visibility May require frequent maintenance and adjustment
	Photoelectric Devices	
Safeguarding Action	Pros	Cons
 Machine will not start cycling when the light field is interrupted When the light field is broken by any part of the operator's body during the cycling process, immediate machine braking is activated 	 Can allow freer movement for operator Simplicity of use Used by multiple operators Provide passerby protection No adjustment required 	 Does not protect against mechanical failure Limited to machines that can be stopped
Radiofrequency Devices		
Safeguarding Action	Pros	Cons

Action

 Does not always provide maximum

 Ma 	ichine	e cy	/cling
Wi	ll no	t s	tart
when the			
capacitance field			
is	inte	rup	oted.

• When the capacitance field is disturbed by any part of the operator's body during the cycling process, immediate machine breaking is activated

 Can allow freer movement for operator Does not protect against mechanical failure

Antennae
 sensitivity must
 be properly
 adjusted; this
 adjustment must be
 maintained
 properly
 Limited to
 machines that can

be stopped

Electromechanical Devices Safeguarding Cons Pros Action • Limits movement of operator May obstruct work space around • Contact bar or operator probe travels a Adjustments must be made for predetermined distance between specific the operator and Can allow access operations and for each individual at the point of the danger area. Interruption of operation Requires this movement frequent prevents the inspections and starting of regular machine cycle. maintenance Requires close supervision of the operator's use of the equipment

Pullback Devices

Safeguarding Action	Pros	Cons
• As the machine begins to cycle, the operator's hands are pulled out of the danger area	• Eliminates the need for auxiliary barriers or other interferences at the danger area	• Limits movement of operator • May obstruct work space around operator • Adjustments must be made for specific operations and for each individual • Requires frequent inspections and regular maintenance • Requires close supervision of the operator's use of the equipment
	Restraint Devices	
Safeguarding Action	Pros	Cons
• Prevents the operator from reaching into the danger area	• Little risk of mechanical failure	 Limits movement of operator May obstruct work space Adjustments must be made for specific operations and each individual Requires close supervision of the operator's use of the equipment

Safety Trip Controls			
Safeguarding Action	Pros	Cons	
• Stops machine when tripped	• Simple to use	 All controls must be manually activated May be difficult to activate controls because of their location Only protects the operator May require special fixtures to hold work May require a machine brake 	
Two-Hand Control			
Safeguarding Action	Pros	Cons	
• Concurrent use of both hands is required, preventing the operator from entering the danger area	 Operator's hands are at a pre- determined location Operator's hands are free to pick up a new part after first half of the cycle is completed 	 Requires a partial cycle machine with a brake Some two-hand controls can be rendered unsafe by holding with arm or blocking, thereby permitting one-hand operation Protects only the operator 	
	Two-Hand Trip		
Safeguarding Action	Pros	Cons	

• Concurrent use
of two hands on
separate controls
prevents hands
from being in the
danger area when
machine cycle
starts

- Operator's hands are away from danger area
- multiple operations
- No obstruction to hand feeding
- Does not require adjustment for each operation

- Operator may try to reach into danger area after tripping machine
- Some trips can • Can be adapted to be rendered unsafe by holding with arm or blocking, thereby permitting one-hand operation
 - Protects only the operator
 - May require special fixtures

Gates			
Safeguarding Action	Pros	Cons	
• Provides a barrier between danger area and operator or other personnel	• Can prevent reaching into or walking into the danger area	• May require frequent inspection and regular maintenance *May interfere with operator's ability to see the work	

Sources:

https://www.osha.gov/SLTC/etools/machineguarding/devices.html

https://www.osha.gov/SLTC/etools/machinequarding/guards.html