



# Scrap ballers

The scrap baller, its operating environment, and the personal protective equipment needed to operate the machine safely are described in this data sheet. Although these machines may be guarded, injury and equipment damage prevention will depend on an effective education and training program, knowledgeable supervision and the execution and enforcement of all authorized safe job procedures.

## Use and description

1. The disposal of scrap from a slitting operation is a very important part of the entire operation. Major methods used are: scrap ballers, scrap choppers, scrap winders and vacuum scrap disposal.
2. Scrap ballers have been utilized for scrap disposal in the coil processing industries for many years. They are widely used because of their simplicity and ease of maintenance. The baller consists of a steel frame that is open on the front and back so that scrap can be wound and bundles discharged. A tapered slotted mandrel is set in the side of the basket (frame). Sitting on top of the mandrel, in a floating position,

is a heavy idler roll that presses down on the motor driven mandrel. These machines may be operated as part of a production line or used independently. If the scrap baller is used as part of the production line, the slit edges of metal are directed to the baller through scrap guides between the slitter and baller. The scrap is then threaded into a winding slot on the mandrel to be collected. Personal exposure to this area must be controlled. If the scrap baller is used independently, the entire operation may be at floor level. The scrap comes off the slitter unrestrained and is allowed to accumulate on the floor or in a trough. The scrap is then pulled or raked to the baller where it is inserted in the slot in the mandrel. As the mandrel turns, it winds up the scrap and the idler roll presses the scrap into a compact ball. To eject the scrap bundle, an ejector cylinder is activated to push the ball off the mandrel.

## Hazards

3. The sharp edges and winding associated with scrap material present a hazard in balling operations. These present a constant threat of

laceration to the employees especially when starting the scrap strand(s) into the baller. Due to the weight of the balled scrap, employees may be subjected to possible sprains, strains or fractures. This may occur during the process of ejecting the scrap from the mandrel or manually repositioning the ejected scrap.

## Guarding

4. Effective guarding techniques should be used where the potential hazards cannot be eliminated by design, installation or machine and equipment arrangement. Specific guarding should be used to comply with the OSHA Safety and Health Standards  
29 CFR 1910.22 (c) covers access and egress  
Nor covers and guard rails  
29 CFR 1910.23 (a) protection for floor openings;  
29 CFR 1910.23 (a)(1) stairways  
29 CFR 1910.23 (e) railings  
29 CFR 1910.23 (d) stairway railings and guards  
29CFR 1910.211 - 219 covers guards for moving parts  
29 CFR 1910.219 Sub Part O Power Transmission (m)  
29CFR 1910.179 Material handling and storage
5. Protective barriers or screens should be provided between the operating position and the scrap baller and between the baller and other work areas.
6. The fact that the scrap baller may work either in unison with or independent of the slitting line requires that all emergency shutdown devices be interlocked. The emergency shutdown controls should be strategically located at potentially hazardous points of operation along the slitting line, as well as at the scrap baller. Interlocked safety cables are generally used.
7. Extra protection for the operator of the scrap baller is afforded by a deadman control that requires the operator to remain at the operating position. The baller should be equipped with an adequate brake that is applied as soon as the power is interrupted.

8. Consideration should be given to audible and/or visual warning devices that activate when the slitting line or scrap baller is shut down in the emergency mode. This is done so that assistance can be given by others in the immediate area if needed.

## Safe job procedures

9. Only authorized persons, properly trained and supervised, should be permitted to operate scrap ballers. All scrap baller operators are issued a safety lock.
10. Before threading scrap into the slot in the mandrel, the operator should shut off the power to the scrap baller and lock out the main switch. After the baller comes to a complete stop, the scrap should be inserted into the mandrel. The operator should then return to the main switch, unlock the switch, and return the power to the unit. After the area is cleared of all personnel, the baller is activated from the safe operating position. CAUTION: The scrap should not be balled with tension on the slitter knives.
11. When removing scrap from the baller, turn the main switch to the baller off and lock it out. After the area is cleared of all personnel, activate the baller kickoff mechanism. Beware of sharp ends when handling and discharging balls of scrap.

## Personal protection

12. All persons working with scrap ballers should always wear the proper protective equipment. This equipment includes: a hard hat, eye protection with attached side shields, long-sleeved work shirts, proper fitting work trousers, leather or protective wristlets, gauntlet gloves, leggings and metatarsal guard hard-toe shoes.

## Sources of information

Safety Requirements for the Construction, Safeguarding, Care and Use of Coil Slitting Machine/ Systems. ANSI B11.18 2006 (R2012), American National Standards Institute, 25 West 43rd Street, New York, NY 10036.