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Hazard and Risk



Multi-Tip



Hazard and Risk Assessment for Multi-Tip Bin Tipplers

Risk Ranking Method

Risk is the combination of the likelihood of a specific unwanted event and the potential consequences if it should occur. For each event, the probability of it occurring is matched to a letter A to E from the list below, and the probable consequence if it did occur is matched to a number 1 to 5.

Probabilities

- A. Common or repeating occurrence
- B. Known to occur, or 'it has happened'
- C. Could occur, or 'I've heard of it happening'
- D. Unlikely to occur
- E. Practically impossible

Consequences for People

- 1. Fatality or permanent disability.
- 2. Serious lost time, injury or illness
- 3. Moderate lost time, injury or illness
- 4. Minor lost time, injury or illness
- 5. No lost time

Based on AS / NZ 4360: 1995 Risk Management



Risk Ranking Table

The consequences (loss outcomes) are combined with the probability of those outcomes in the risk ranking table to identify the risk rank of each loss event, (e.g. a consequence of 3 with a probability of B yields a risk rank from of 9. A rank of 1 is the highest magnitude of risk for a highly likely, very serious event. A rank of 25 represents the lowest magnitude of risk, an almost impossible, very low consequence event.

			PROBABILITY OF EVENT OCCURRING				
			COMMON ←-----→ UNLIKELY				
			A	B	C	D	E
CONSEQUENCES IF EVENT DOES OCCUR	MINOR ↔ SERIOUS	1	1	2	4	7	11
		2	3	5	8	12	16
		3	6	9	13	17	20
		4	10	14	18	21	23
		5	15	19	22	24	25

1 – 3 Extreme**4 – 6 Serious****7 – 9 High****10 – 12 Significant****13 – 16 Moderate****17 – 19 Low****20 – 22 Very Low****23 – 25 Insignificant**



Potential Hazards

Risk Ranking

1. Use by unauthorized or untrained personnel

**C4 = 18
(Low)**

Control Method: Only allow trained and authorized operators to use the machine. If machine will be in an area where unauthorized persons have access, fit a key - operated isolating switch. Operators must read and obey the instructions displayed on the machine.

2. Trapping of hands or feet by moving bin-cradle.

**C3 = 13
(Moderate)**

Control Method: All persons other than the operator must keep well clear while the machine is in use. The operator must stand at the 'control' side, and must not attempt to hold the bin or cradle while it is moving. Do not put feet under the machine.

A pendant control, if fitted, must **only** be used while the operator is standing well clear of the machine. It **must not** be used if any part of the operator's body could come into contact with any moving part of the machine.

NOTE: Unlike many other bin-tippers, the cradle on a Multi-Tip comes down by gravity alone, and speed is controlled hydraulically. Except where a bin does not empty, or is lowered with product still in it, there is little chance of injury being caused by the cradle coming down under its own weight.



3. Machine being tipped over

**D4 = 21
(Very Low)**

Control Method: Never operate on uneven or sloping ground. Engage the wheel brakes before use. Engage the Bin-retainer hooks if these have been fitted to the machine. If there is a perceived risk that the machine could top over, fit and use a Bin-retainer kit.

6. Electrocutation

**D1 = 7
(High)**

Control Method: Ensure the charging lead is in good condition. Replace the lead if the insulation is damaged. Keep dry, and charge in dry areas. Fit an RCD to the supply socket.



Construction

Multi-Tip bin-tippers have a steel frame comprising a vertical mast and stabilising legs, usually fitted with 4 castors. A bin cradle moves vertically in the mast, and is inverted at the appropriate height by a roller running in a track.

Operation

A hydraulic ram provides the force to lift and empty the bin. The ram is supplied by a battery-powered hydraulic power pack. Electrical, hydraulic, and/or mechanical control mechanisms allow the operator to raise or lower the bin in a controlled manner.

Guarding

The mesh guard panel protects the operator from the moving cradle, and sheet metal covers are in place to prevent access to the hydraulic power pack, ram and fittings.

Safety features include:

- Safety screens shield the operator from moving parts.
- A Pressure-compensating lowering valve which automatically regulates the lowering speed regardless of the weight of the bin.
- The Machine stops instantly if the raise or lower button is released.

Conclusion

Multi-Tip Bin Tippers are designed and manufactured to be safe to operate. A significant safety margin is built in to all load-bearing parts. Guarding prevents access to moving parts.