NIOSH lifting equation comparison

EZ DUMP COMMERCIAL INC

Figure A   Regular trashcan bag lift is 33"
User often must hold can due to bag suction/vacuum.
Lifting power lost
User is at risk

Figure B   SmartcanMax™ bag lift is 6.5"
There is no bag suction/vacuum
Lifting power is maintained
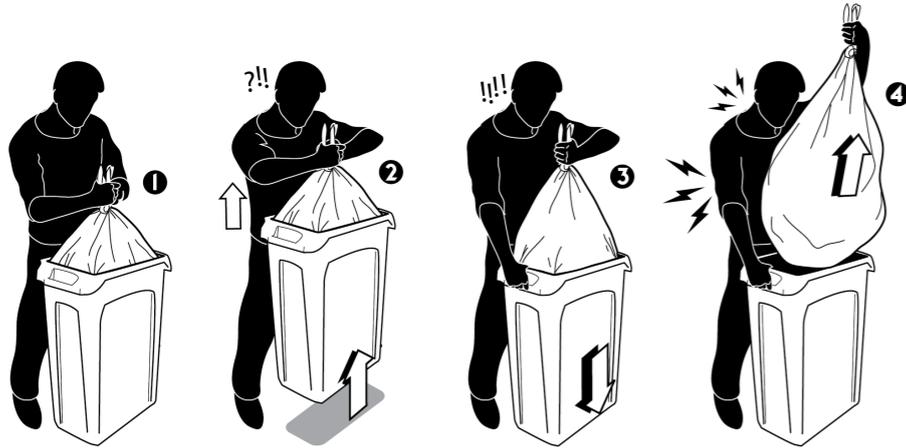User is at much less risk

Figure A represents a potentially dangerous risk to the shoulder. With the arm in full extension and the shoulder in flexion, great force will be applied to the shoulder while lifting. With the shoulder acting as the lever the force on the shoulder will be 5-10 times greater than the weight of the bag. This move is very likely to end in a shoulder injury. In addition there will be unilateral loading and likely extension of the spine creating stress on the low back and Sacroiliac joints.
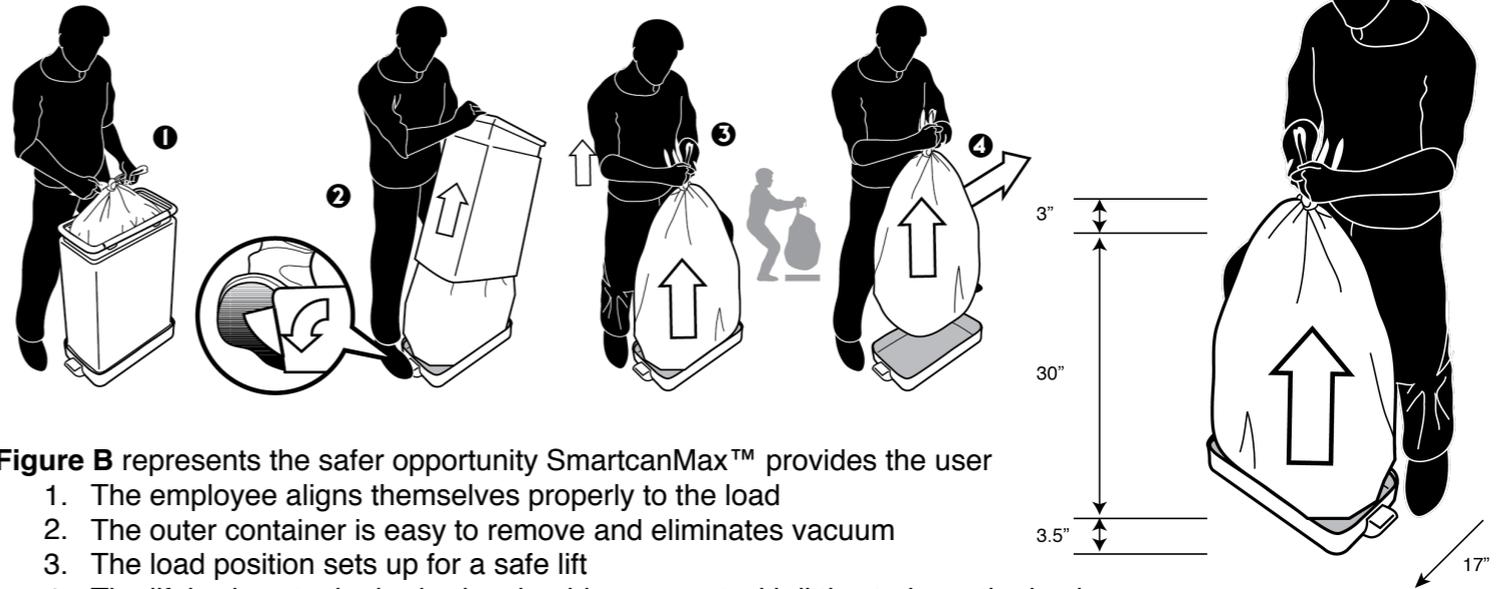
Figure B represents the safer opportunity SmartcanMax™ provides the user
1. The employee aligns themselves properly to the load
2. The outer container is easy to remove and eliminates vacuum
3. The load position sets up for a safe lift
4. The lift is close to the body, the shoulders are set with little strain on the back
5. Re-loading the trash bag is is easy

OSHA Recommended Weight Limit (RWL) = LC x HM x VM x DM x AM x FM x CM

Weight of bag = 51 pounds	LC	Weight of bag = 51 pounds
Hands start 17" away from body (arm length to center of torso), arms bent	H	Hands start 17" away from body (arm length to center of torso), arms bent
Hands start 30.4" high (adjusted for one hand top of bag, one hand on side of can to steady it)	V	Hands start 33" high (top of bag)
Lift bag 33" (30" to top of can, 3" to clear top of can)	D (Up)	Lift bag 6.5 (3.5 to top of base, 3" to clear top of base)
Rotate bag 45˚	A	Rotate bag 45˚
Lower bag 33"	D (Down)	Lower bag 6.5"
Distance traveled = 66"	D (Total)	Distance travelled = 13"
Number of lifts (V≥ 30, Frequency/minute 2)	F	Number of lifts (V≥ 30, Frequency/minute 2)
Bag hand grip poor (1 hand on bag, 1 on can as bag removed)	C	Bag hand grip good (2 hands on bag)

Equation Results = Traditional can 12.44   SmartcanMax™ 17.57