CALCULATIONS.

The revised lifting equation for calculating the Recommended Weight Limit (RWL) is based on a multiplicative model that provides a weighting for each of six variables:

RWL = LC × HM × VM × DM × AM × FM × CM

where:

LC = Load Constant *(51 pounds)*

HM = Horizontal Multiplier *(10/H)*

Horizontal location of the hands (H): The horizontal location of the hands at both the start (origin) and end (destination) of the lift must be measured. The horizontal location is measured as the distance from the mid-point between the employee's ankles to a point projected on the floor directly below the mid-point of the hands grasping the object (the middle knuckle can be used to define the mid-point). The horizontal distance should be measured when the object is lifted (when the object leaves the surface).

VM = Vertical Multiplier *(1 - (0.0075|V-30|))*

Vertical location of the hands (V): The vertical location is measured from the floor to the vertical mid-point between the two hands (the middle knuckle can be used to define the mid-point).

DM = Distance Multiplier *(0.82 + (1.8 / D)*

Travel Distance of the load (D): The total vertical travel distance of the load during the lift is determined by subtracting the vertical location of the hands (V) at the start of the lift from the vertical location of the hands (V) at the end of the lift. For lowering, the total vertical travel distance of the load is determined by subtracting the vertical location of the hands (V) at the end of the lower from the vertical location of the hands (V) at the start of the lower.

AM = Asymmetric Multiplier *(1 - (0.0032A))*

Asymmetry Angle(A): The angular measure of the perpendicular line that intersects the horizontal line connecting the mid-point of the shoulders and the perpendicular line that intersects the horizontal line connecting the outer mid-point of the hips.

FM = Frequency Multiplier (See Frequency Table Below (Table VII:1-1))

Lifting Frequency (F): The average lifting frequency rate, expressed in terms of lifts per minute, must be determined. The frequency rate can be determined by observing a typical 15 minute work period, and documenting the number of lifts performed during this time frame. The number of lifts observed is divided by 15 to determine the average lifts per minute. Duration is measured using the following categories: Short (Less than one hour); Moderate (1 to 2 hours); Long (2 to 8 hours).

TABLE VII:1-1. FREQUENCY MULTIPLIER TABLE (FM) Frequency Lifts/min (F) ‡	Work Duration		
	< 1 Hour	> 1 but < 2 Hours	> 2 but < 8 Hours

TABLE VII:1-2. COUPLING TABLE GOOD	FAIR	POOR
CM = 1.00	V < 30" then CM = 0.95	CM = 0.90
	V > or = to 30" then CM = 1.00	