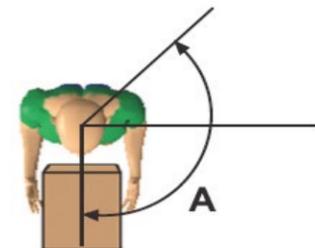
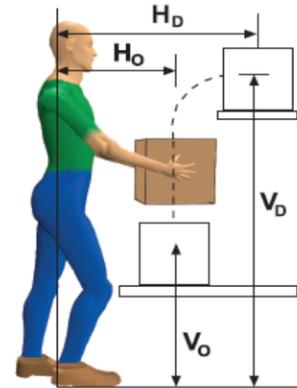




# NIOSH Lifting Equation Manual Scoring Sheet

Date: _____	Task: _____
Company: _____	Supervisor: _____
Dept: _____	Evaluator: _____

ACTUAL MEASUREMENTS	Origin	Destination
Load Weight (L) (pounds)		
Load Constant (pounds)	51	51
Horizontal Location ( H ) (inches)		
Vertical Location ( V ) (inches)		
Vertical Travel Distance (  Vo - Vd  )		
Asymmetry Angle ( A ) (degrees)		
Lifting Duration (hours)		
Lifting Frequency ( F ) (lifts/minute)		
Coupling ( C )		



### RESULTS

	Origin	Destination
Recommended Weight Limit (RWL)		
Lifting Index (LI)		

**LI ≤ 1:** This lift may be acceptable.

**1 < LI ≤ 3:** This lift may increase the risk of low back or lifting injury. Controls should be considered

**LI > 3:** This lift may exceed the capabilities of safely performing the lift for nearly all workers. Redesign of the lifting task is recommended.

Double circle worst case multiplier; single circle second worst case multiplier

H
V
D
A
F
C

## Duration

### Short: $\leq 1$ hour of lifting

- Must also be followed by a recovery time equal to 1.0 times the work time
- If recovery time is NOT met, and a subsequent lifting session is performed, then total lifting time must be combined to correctly determine duration category

### Moderate: $> 1$ hour but $\leq 2$ hours

- Must also be followed by a recovery time equal to 0.3 times the work time
- If recovery time is NOT met, and a subsequent lifting session is performed, then total lifting time must be combined to correctly determine duration category

Needed time between lifting episodes =  $120 \times 0.3 = 36$  min/every 2 hours (maximum) or jump to the next category!

### Long: $> 2$ hours but $\leq 8$ hours

## Coupling

- Coupling describes how the worker handles or grasps the part or load.
- Coupling is rated as;
  - Good
  - Fair
  - Poor
- Descriptions of each category follow with some basic definitions.

### Coupling can change between origin and destination!

**Optimal handle design:** A cylindrically shaped handle that has 0.75 to 1.5 inches diameter and greater than 4.5 inches in length. The handle has a smooth, non-slip surface with at least 2.0 inches of clearance available between the side of the object and the handle.

**Optimal hand-hold cut-out:** A cut-out that measures greater than or equal to 1.5 inches in height, 4.5 inches in length and semi-oval in shape. Container thickness is a consideration as well (contact stress) with greater than 0.25 inches preferred.

**Optimal container design:** A container that has a frontal length less than or equal to 16 inches and a height of less than or equal to 12 inches with a smooth, non-slip surface can be classified optimal. Center-of-mass is symmetric and stable contents are assumed for this type of container.

**Loose object:** An object not enclosed in a box container.

Definitions located in your workbook (page NIOSH-9).

Another way to classify 'Coupling' using the definitions (page NIOSH-10)

