**ErgoSystems Ergonomics Risk Factor Analysis**

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| **STEP ONE** | **Company:** | ABC Company, Inc. | **Date:** | 8/1/2011 | **Department/****Work Unit:** | Machine Center |
|  | **Prepared by:** | Mark Johnson | **Time:** | 10:00 AM | **Safety FYIs/ Injury History:** | 3 FYIs, 0 incidents |
| **Job/Task Observed:** | Fill CNC Reservoirs, 5 gal buckets, 75 to 100 feet, fill each of 7 CNC 1 to 3/week | **# People Affected:** | 3 | **Employees Observed:** | Amy Sedon |

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| **STEP TWO** | **Head/Neck/Eyes** | **Shoulders/Upper Back** | **Back (Mid/Low)** | **Arms/Elbows** | **Hands/Wrists/Fingers** | **Legs/Feet** |
| **Posture** | E:\body_postures\neck\07102.jpg | E:\body_postures\neck\07105.jpg | L:\Forms\Ergonomics Analysis Worksheet\Manufacturing Ergonomics Analysis\Images\Elevated_Reach.png | E:\body_postures\shoulder\02107.jpg | E:\tasks_actions\lift_carry_reach\10115.jpg | E:\body_postures\trunk\01105.jpg | E:\body_postures\shoulder\02104.jpg | E:\body_postures\wrist\08102.jpg | E:\body_postures\wrist\08104.jpg | L:\Forms\Ergonomics Analysis Worksheet\Manufacturing Ergonomics Analysis\Images\Squat.png | kneeling.jpg |
| E:\body_postures\wrist\08101.jpg | E:\body_postures\wrist\08105.jpg |
| E:\body_postures\neck\07103.jpg | E:\body_postures\neck\07108.jpg | E:\tasks_actions\lift_carry_reach\10108.jpg | **L:\Forms\Ergonomics Analysis Worksheet\Manufacturing Ergonomics Analysis\Images\Reach_Behind_Body.png** | E:\body_postures\trunk\01103.jpg | E:\body_postures\trunk\01108.jpg | prno sup.jpg | E:\tasks_actions\hand\06102.jpg | E:\tasks_actions\hand\06103.jpg | E:\tasks_actions\lift_carry_reach\10146.jpg | **L:\Forms\Ergonomics Analysis Worksheet\Manufacturing Ergonomics Analysis\Images\Standing_Female.png** |
| [x]  Look down > 300[ ]  Look up > 100[ ]  Side bent > 150[ ]  Rotated > 200 | [ ]  Reach above shoulder ht[x]  Shrugged shoulders[ ]  Reach to side of body[ ]  Reach behind body | [x]  Flexed forward >200[ ]  Extended back > 200[ ]  Bent sideways > 200[ ]  Rotated >200 | [ ]  Fully extended arm[ ]  Rotation of wrists/ forearms, palms up/down | [ ]  Wrist flex/extend > 20o[ ]  Wrist bent to side > 15o[ ]  Pinch grip[x]  Power grip | [x]  Squatting [ ]  Kneeling[ ]  On one leg/up on toes[ ]  Sustained standing |
| **Force** | 0 | Light: Neutral head | 0 | Light: < 5# | 0 | Light: Neutral back pos | 0 | Light: < 3# | 0 | Light: < 2# | 0 | NA |
| 1 | Mod: Head wt (HW) only | 1 | Mod: 5# to 10# | 1 | Mod: Body + up to 20# | 1 | Mod: 3# to 8# | 1 | Mod: 2# to 5# | 1 | Mod: Body wt (BW) only |
| 2 | Heavy: HW + up to 20# | 2 | Heavy: 10 # to 20# | 2 | Heavy: Body + 20# to 40# | 2 | Heavy: 8# to 15# | 2 | Heavy: 5# to 10# | 2 | Heavy: BW + up to 40# |
| 3 | Very Heavy: > HW + 20# | 3 | Very Heavy: >20# | 3 | Very Hvy: > Body+ > 40# | 3 | Very Heavy: >15# | 3 | Very Heavy: >10# | 3 | Very Heavy: BW + > 60# |
|  **Duration (static)** | 0 | Low: < 10 sec | 0 | Low: < 10 sec | 0 | Low: < 10 sec | 0 | Low: < 10 sec | 0 | Low: < 10 sec | 0 | Low: < 10 sec |
| 1 | Mod: 10 to 45 sec | 1 | Mod: 10 to 45 sec | 1 | Mod: 10 to 45 sec | 1 | Mod: 10 to 45 sec | 1 | Mod: 10 to 45 sec | 1 | Mod: 10 sec to 30 min |
| 2 | High: > 45 sec | 2 | High: > 45 sec | 2 | High: > 45 sec | 2 | High: > 45 sec | 2 | High: > 45 sec | 2 | High: > 30 min |
| **Frequency** | 0 | Low: < 0.5/min  | 0 | Low: < 0.5/min | 0 | Low: < 0.25/min | 0 | Low: < 0.5/min | 0 | Low: < 1/min | 0 | Low: < 0.5/min |
| 1 | Mod: 0.5 to 5/min | 1 | Mod: 0.5 to 5/min | 1 | Mod: 0.25 to 3/min | 1 | Mod: 0.5 to 5/min | 1 | Mod: 1 to 5/min | 1 | Mod: 0.5 to 3/min |
| 2 | High: > 5/min | 2 | High: > 5/min | 2 | High: > 3/min | 2 | High: > 5/min | 2 | High: > 5/min | 2 | High: > 3/min |

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| **STEP THREE** | **Score *(per body part)*:** total number of checked boxes for **Posture** plus sum of numbers circled for **Force**, **Duration** and **Frequency****Risk *(per body part)* :** for each body part circle the risk level depending on the total points for that body part: **Low**: 0 to 1, **Mod**: 2 to 3, **High** > 4 |
| **Score** | **3**  **LL LM LHL**  | **6**   **LL LM LHL**  | **4**   **LL LM LHL**  | 0 **LL LM LHL** | **6**   **LL LM LHL** | **3**  **LL LM LHL** |

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| **STEP FOUR** | **Other Factors** | **YES** | **NO** |  | **STEP FIVE** | **Pre Discomfort Survey/Employee Input Summary** |
| **Production/Quality** – Work processes affected negatively | [ ]  | [ ]  |  | **Complete survey based on average workday.**Indicate left and right side using Key below: | **Employee Comments:*** Reported discomfort in back, hands, arms and shoulders when transporting buckets between fill station and reservoir at the CNC machines.
* Have to bend down when using hose to fill the buckets.
* Have to pick up bucket and dump into reservoir.

***NOTE***: Scores are average of 3 individuals completing the Discomfort Survey |
| **Training** – Inadequate safety or process training | [ ]  | [ ]  | **0 = NONE/MINIMAL:** Some discomfort, able to reasonable cope while performing general tasks |
| **Vibration** – Of hand/arm, related to tool use (grinders, sanders, etc.) | [ ]  | [ ]  | **1 = MODERATE:** Moderate discomfort, some difficulty in performing general activities. |
| **Vibration** – Of whole body, related to driving vehicles (fork trucks, etc.) | [ ]  | [ ]  | **2 = SEVERE:** Significant difficulty in performing general activities. |
| **Temperature/Hot** – Exposure to hot environments | [ ]  | [ ]  |  | **3 = MAX:** Maximum discomfort (unable to function, admitted to the hospital.) |
| **Temperature/Cold** – Exposure to cold environments | [ ]  | [ ]  |  |

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| **Body Part** | **Left**  | **Right**  |
| 1. **Head/Neck/ Eyes**
 | 0 | **0** |
| 1. **Shoulders/ Upper Back**
 | 2 | 2 |
| 1. **Back (Mid/Low)**
 | 1 | 1 |
| 1. **Arms/Elbows**
 | 1 | 1 |
| 1. **Hands/Wrists/ Fingers**
 | 2 | 2 |
| 1. **Legs/Feet**
 | 1 | 1 |
| **Left (6) + Right (6) = (12)** |

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| **Contact Stress** –Hard surface pressure on body from sitting or standing | [ ]  | [ ]  |  |
| **Contact Stress** – Sharp edge pressure on body from workbench, tool, etc. | [x]  | [ ]  |  |
| **Tools** – Incorrect tool or tool used incorrectly | [x]  | [ ]  |  |
| **Task lighting** – Inadequate task light for inspection  | [ ]  | [ ]  |  |
| **Ambient lighting** – Too low or too high level of ambient lighting | [ ]  | [ ]  |  |
| **Vision** – Difficulty in seeing parts/materials to assemble or inspect | [ ]  | [ ]  |  |

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| **STEP SIX** | **Total Score** |  | **STEP SEVEN** | **Action Plan** |
| **Head/Neck/Eyes** | 3 |  |

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| **Corrective Action** | **Responsible Person(s)** | **Due Date** | **Status** |
| Obtain cart to position and transport buckets from fill station to CNCs. Cart needs to be able to position bucket at knee level and easy to maneuver. | Mark Johnson | 8/12/2011 |

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| [x]  | **Not Started** |
| [ ]  | **In Process** |
| [ ]  | **Completed** |

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| [ ]  | **Not Started** |
| [ ]  | **In Process** |
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| [ ]  | **Not Started** |
| [ ]  | **In Process** |
| [ ]  | **Completed** |

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| **Shoulders/Upper Back** | 6 |  |
| **Back (Mid/Low)** | 4 |  |
| **Arms/Elbows** | 0 |  |
| **Hands/Wrists/Fingers** | 6 |  |
| **Legs/Feet** | 3 |  |
| **Other Factors** | 2 |  |
| **Discomfort Survey** | 12 |  |
| **TOTAL SCORE****SCORING KEY: LOW: 0 to15 MOD: 16 to 30 HIGH: > 30**  | **36** |  |