**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** |
| Look down > 300  Look up > 100  Side bent > 150  Rotated > 200 | | | Reach above shoulder ht  Shrugged shoulders  Reach to side of body  Reach behind body | | | 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  Power grip | | | 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 | |  |  |  | |  |  |  | | --- | --- | --- | | **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)** | | | | |  |  |
| **Contact Stress** –Hard surface pressure on body from sitting or standing | |  |  |  |
| **Contact Stress** – Sharp edge pressure on body from workbench, tool, etc. | |  |  |  |
| **Tools** – Incorrect tool or tool used incorrectly | |  |  |  |
| **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 |  | |  |  |  |  | | --- | --- | --- | --- | | **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 | |  |  | | --- | --- | |  | **Not Started** | |  | **In Process** | |  | **Completed** | | |  |  |  | |  |  | | --- | --- | |  | **Not Started** | |  | **In Process** | |  | **Completed** | | |  |  |  | |  |  | | --- | --- | |  | **Not Started** | |  | **In Process** | |  | **Completed** | | | |
| **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** |  |