A Step-by-Step Guide to

# Rapid Entire Body Assessment (REBA)

ERGONOMICS PLUS

Rapid Entire Body Assessment (REBA) is an ergonomic assessment tool in the public domain. You can view the original source materials here:

Source: Hignett and McAtamney, 2000

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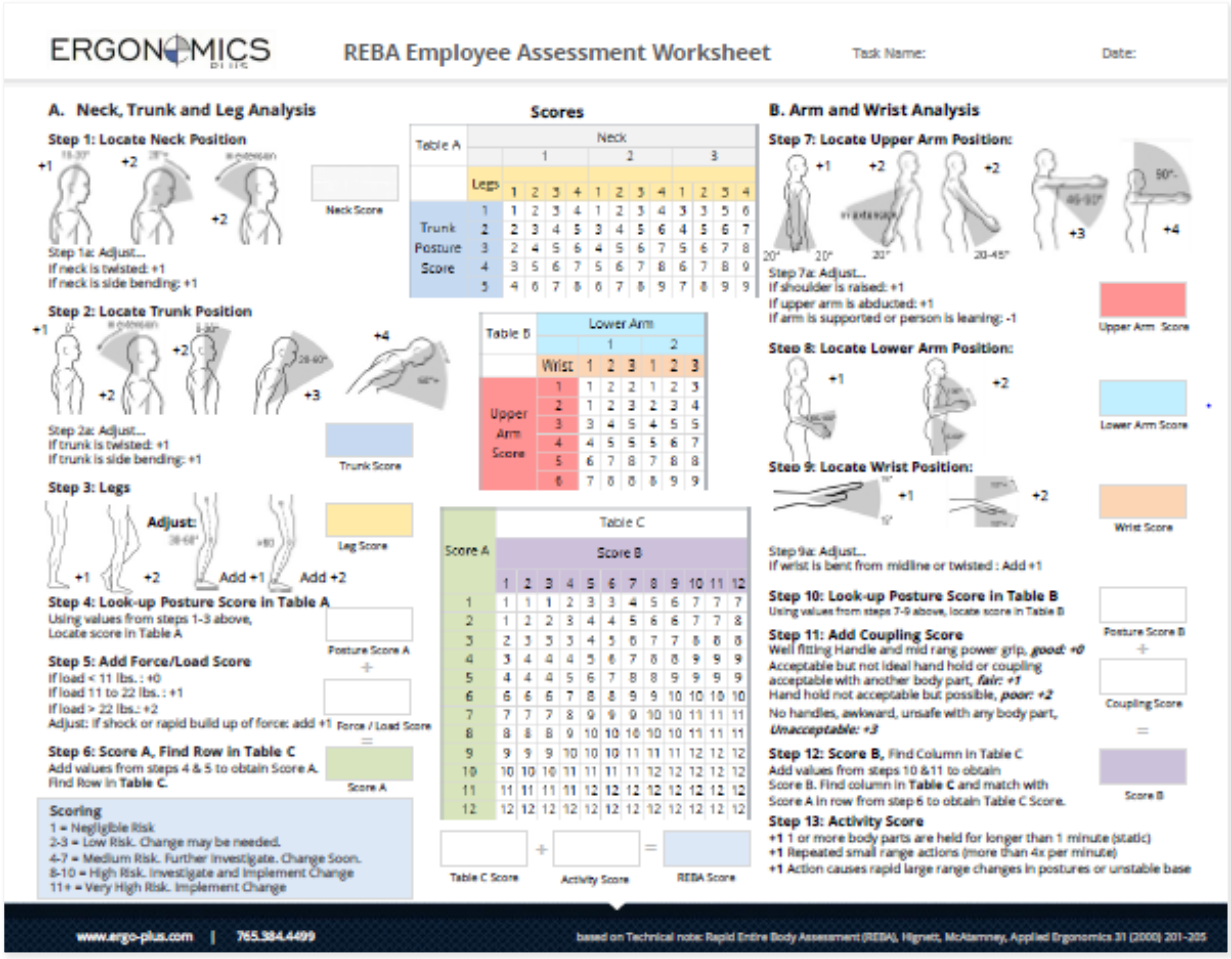
# INTRODUCTION TO REBA

This ergonomic assessment tool uses a systematic process to evaluate whole body postural MSD and risks associated with job tasks. A single page worksheet is used to evaluate required or selected body posture, forceful exertions, type of movement or action, repetition, and coupling.




The REBA was designed for easy use without need for an advanced degree in ergonomics or expensive equipment. You only need the worksheet and a pen. On second thought, you probably should finish reading and studying this guide, and I suppose a clipboard would help as well. Using the REBA worksheet, the evaluator will assign a score for each of the following body regions: wrists, forearms, elbows, shoulders, neck, trunk, back, legs and knees. After the data for each region is collected and scored, tables on the form are

then used to compile the risk factor variables, generating a single score that represents the level of MSD risk:

| Score | Level of MSD Risk |
|---|---|
| 1 | negligible risk, no action required |
| 2-3 | low risk, change may be needed |
| 4-7 | medium risk, further investigation, change soon |
| 8-10 | high risk, investigate and implement change |
| 11+ | very high risk, implement change |

## Getting Ready

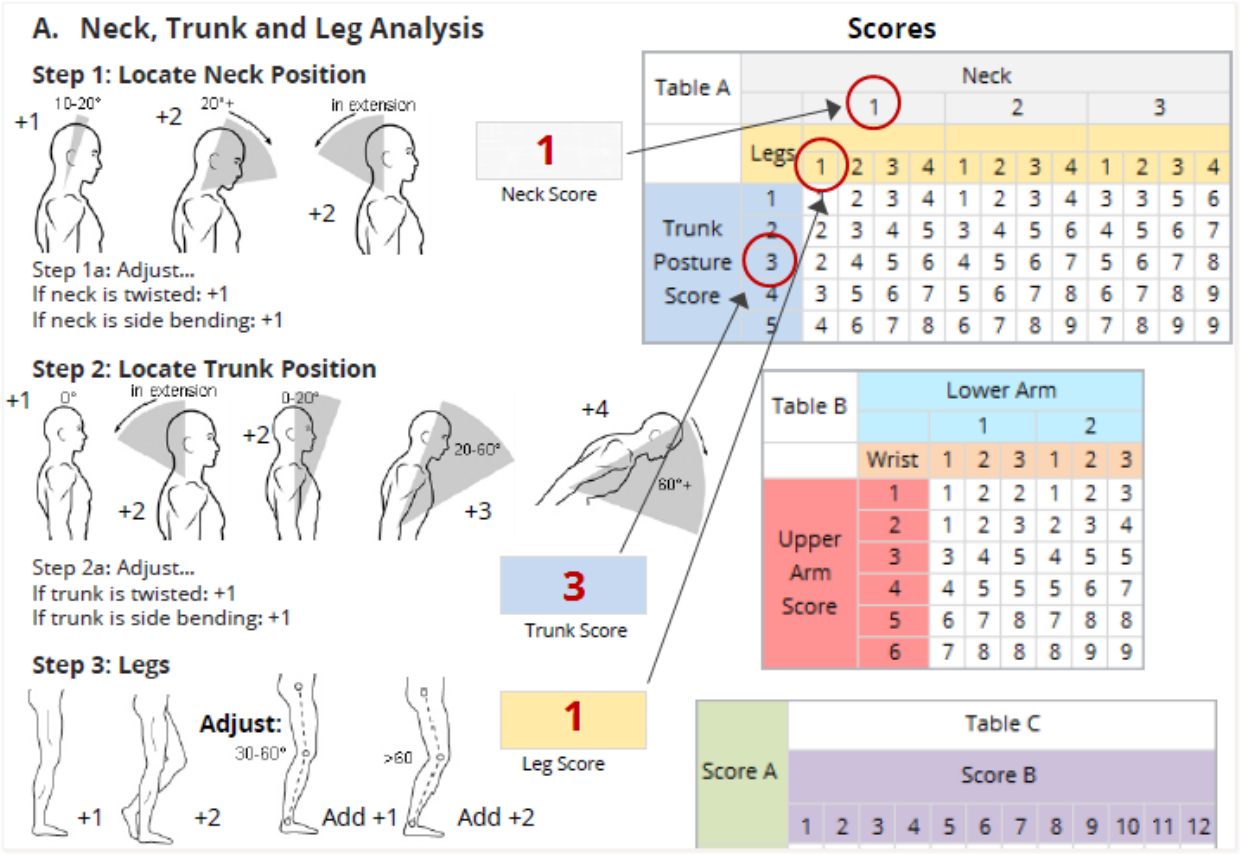
The evaluator should prepare for the assessment by interviewing the worker being evaluated to gain an understanding of the job tasks and demands, and observing the worker's movements and postures during several work cycles. Selection of the postures to be evaluated should be based on: 1) the most difficult postures and work tasks (based on worker interview and initial observation), 2) the posture sustained for the longest period of time, or 3) the posture where the highest force loads occur. The REBA can be conducted quickly, so multiple positions and tasks within the work cycle can usually be evaluated without a significant time/effort cost. When using REBA, only the right or left side is assessed at a time. After interviewing and observing the worker the evaluator can determine if only one arm should be evaluated, or if an assessment is needed for both sides.

# USING THE REBA – EXAMPLE

The REBA worksheet is divided into two body segment sections on the labeled A and B. Section A (left side) covers the neck, trunk, and leg. Section B (right side) covers the arm and wrist. This segmenting of the worksheet ensures that any awkward or constrained postures of the neck, trunk or legs which might influence the postures of the arms and wrist are included in the assessment.

Score Group A (Trunk, Neck and Legs) postures first, then score Group B (Upper Arms, Lower Arms, and Wrists) postures for left and right. For each region, there is a posture scoring scale and additional adjustments which need to be considered and accounted for in the score.

## Steps 1-3: Neck, Trunk and Leg Analysis

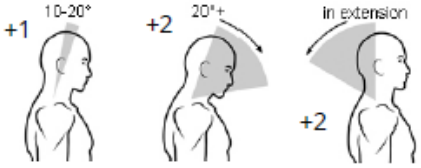



**Note:** In step 2, a +2 score was used for trunk position (0-20 degrees) and +1 was added for the side bending adjustment (when viewed from behind, worker was left side bending approximately 10 degrees) for a total score of +3.

# Steps 4-6: Calculate the score for Group A as outlined below:

## A. Neck, Trunk and Leg Analysis

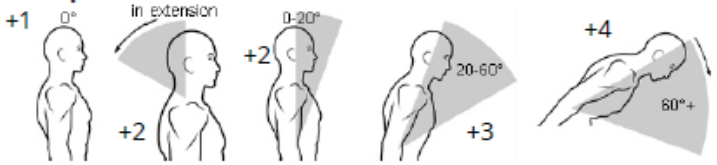
### Step 1: Locate Neck Position




**1** Neck Score

Step 1a: Adjust...
If neck is twisted: +1
If neck is side bending: +1

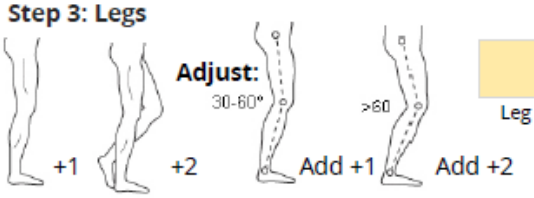
### Step 2: Locate Trunk Position




**3** Trunk Score

Step 2a: Adjust...
If trunk is twisted: +1
If trunk is side bending: +1

### Step 3: Legs




**1** Leg Score

### Step 4: Look-up Posture Score in Table A

Using values from steps 1-3 above,
Locate score in Table A

**2** Posture Score A

\+

### Step 5: Add Force/Load Score

If load < 11 lbs. : +0
If load 11 to 22 lbs. : +1
If load > 22 lbs.: +2
Adjust: If shock or rapid build up of force: add +1

**1** Force / Load Score

=

### Step 6: Score A, Find Row in Table C

Add values from steps 4 & 5 to obtain Score A.
Find Row in **Table C**.

**3** Score A

### Scoring

1 = Negligible Risk
2-3 = Low Risk. Change may be needed.
4-7 = Medium Risk. Further Investigate. Change Soon.
8-10 = High Risk. Investigate and Implement Change
11+ = Very High Risk. Implement Change

## Scores

**Table A**

| Trunk Posture Score | Neck 1 / Legs 1 | 2 | 3 | 4 | Neck 2 / Legs 1 | 2 | 3 | 4 | Neck 3 / Legs 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 3 | 3 | 5 | 6 |
| 2 | 2 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 4 | 5 | 6 | 7 |
| 3 | 2 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 5 | 6 | 7 | 8 |
| 4 | 3 | 5 | 6 | 7 | 5 | 6 | 7 | 8 | 6 | 7 | 8 | 9 |
| 5 | 4 | 6 | 7 | 8 | 6 | 7 | 8 | 9 | 7 | 8 | 9 | 9 |

**Table B**

| Upper Arm Score | Lower Arm 1 / Wrist 1 | 2 | 3 | Lower Arm 2 / Wrist 1 | 2 | 3 |
|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 2 | 1 | 2 | 3 |
| 2 | 1 | 2 | 3 | 2 | 3 | 4 |
| 3 | 3 | 4 | 5 | 4 | 5 | 5 |
| 4 | 4 | 5 | 5 | 5 | 6 | 7 |
| 5 | 6 | 7 | 8 | 7 | 8 | 8 |
| 6 | 7 | 8 | 8 | 8 | 9 | 9 |

**Table C**

| Score A | Score B 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | 7 | 7 |
| 2 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 7 | 8 |
| 3 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | 7 | 8 | 8 | 8 |
| 4 | 3 | 4 | 4 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 9 |
| 5 | 4 | 4 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 9 | 9 |
| 6 | 6 | 6 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 10 | 10 | 10 |
| 7 | 7 | 7 | 7 | 8 | 9 | 9 | 9 | 10 | 10 | 11 | 11 | 11 |
| 8 | 8 | 8 | 8 | 9 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 |
| 9 | 9 | 9 | 9 | 10 | 10 | 10 | 11 | 11 | 11 | 12 | 12 | 12 |
| 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 |
| 11 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |

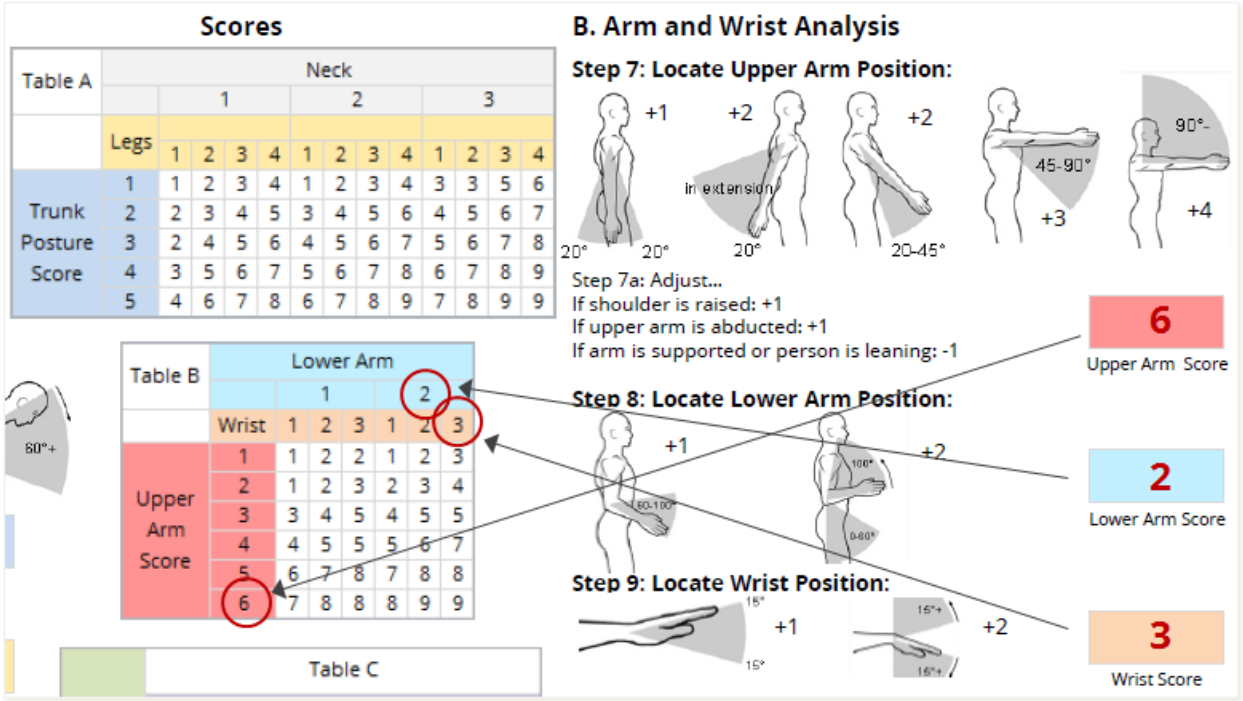
Table C Score + Activity Score = REBA Score

**Step 4: Using values from steps 1-3, locate the score for this step in table A.**

**Step 5: Add the force score to this box. In this case, the weight of the component part inserted by the worker is 11.5 lbs. Therefore, the score for this step is +1.**

**Step 6: Add the values in step 4 and 5 to obtain score A. Find row for Score A in Table C and circle value.**

## Steps 7-9: Right Arm and Wrist Analysis




**Note**: In step 7 the right upper arm is raised more than 90 degrees for a score of +4, a total adjustment of +2 is added because the shoulder is raised (+1) and the upper arm is abducted (+1) for a total score of +6. In step 8, a +2 score was used due to the arm position outside of the neutral range. In step 9, a twisting adjustment of +1 was added to the position score of +2 for a total wrist score of +3.

# Steps 10-13: Calculate the score for Group B as outlined below:

## Scores

| Table A | | Neck | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | | | 2 | | | | 3 | | | |
| | Legs | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Trunk Posture Score | 1 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 3 | 3 | 5 | 6 |
| | 2 | 2 | 3 | 4 | 5 | 3 | 4 | 5 | 6 | 4 | 5 | 6 | 7 |
| | 3 | 2 | 4 | 5 | 6 | 4 | 5 | 6 | 7 | 5 | 6 | 7 | 8 |
| | 4 | 3 | 5 | 6 | 7 | 5 | 6 | 7 | 8 | 6 | 7 | 8 | 9 |
| | 5 | 4 | 6 | 7 | 8 | 6 | 7 | 8 | 9 | 7 | 8 | 9 | 9 |

| Table B | Lower Arm | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | | | 2 | | |
| | Wrist | 1 | 2 | 3 | 1 | 2 | 3 |
| Upper Arm Score | 1 | 1 | 2 | 2 | 1 | 2 | 3 |
| | 2 | 1 | 2 | 3 | 2 | 3 | 4 |
| | 3 | 3 | 4 | 5 | 4 | 5 | 5 |
| | 4 | 4 | 5 | 5 | 5 | 6 | 7 |
| | 5 | 6 | 7 | 8 | 7 | 8 | 8 |
| | 6 | 7 | 8 | 8 | 8 | 9 | 9 |

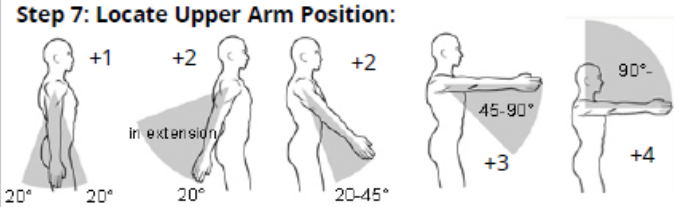
| Table C | Score B | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Score A | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | 1 | 1 | 1 | 2 | 3 | 3 | 4 | 5 | 6 | 7 | 7 | 7 |
| 2 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 6 | 6 | 7 | 7 | 8 |
| 3 | 2 | 3 | 3 | 3 | 4 | 5 | 6 | 7 | 7 | 8 | 8 | 8 |
| 4 | 3 | 4 | 4 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 9 |
| 5 | 4 | 4 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 9 | 9 | 9 |
| 6 | 6 | 6 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 10 | 10 | 10 |
| 7 | 7 | 7 | 7 | 8 | 9 | 9 | 9 | 10 | 10 | 11 | 11 | 11 |
| 8 | 8 | 8 | 8 | 9 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 |
| 9 | 9 | 9 | 9 | 10 | 10 | 10 | 11 | 11 | 11 | 12 | 12 | 12 |
| 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 |
| 11 | 11 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |

**8** + **1** = **9**

Table C Score | Activity Score | REBA Score

## B. Arm and Wrist Analysis

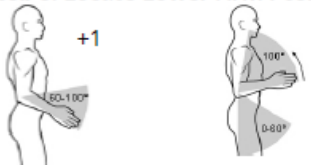
**Step 7: Locate Upper Arm Position:**




Step 7a: Adjust...
If shoulder is raised: +1
If upper arm is abducted: +1
If arm is supported or person is leaning: -1

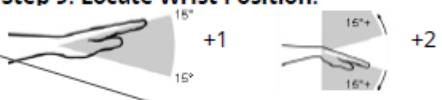
**6** Upper Arm Score

**Step 8: Locate Lower Arm Position:**




**2** Lower Arm Score

**Step 9: Locate Wrist Position:**




**3** Wrist Score

Step 9a: Adjust...
If wrist is bent from midline or twisted : Add +1

**Step 10: Look-up Posture Score in Table B**
Using values from steps 7-9 above, locate score in Table B

**9** Posture Score B

**Step 11: Add Coupling Score**
Well fitting Handle and mid rang power grip, ***good: +0***
Acceptable but not ideal hand hold or coupling acceptable with another body part, ***fair: +1***
Hand hold not acceptable but possible, ***poor: +2***
No handles, awkward, unsafe with any body part, ***Unacceptable: +3***

+

**1** Coupling Score

=

**Step 12: Score B,** Find Column in Table C
Add values from steps 10 &11 to obtain Score B. Find column in **Table** C and match with Score A in row from step 6 to obtain Table C Score.

**10** Score B

**Step 13: Activity Score**
**+1** 1 or more body parts are held for longer than 1 minute (static)
**+1** Repeated small range actions (more than 4x per minute)
**+1** Action causes rapid large range changes in postures or unstable base

## Step 10: Using values from steps 7-9, locate the posture score for this step in table B.

## Step 11: Add the coupling score. In this case, the coupling is considered fair (+1).

## Step 12: First, add the values in step 10 and 11 to obtain score B. Next, find column in Table C and match with Score A in row from step 6 to obtain Table C Score.

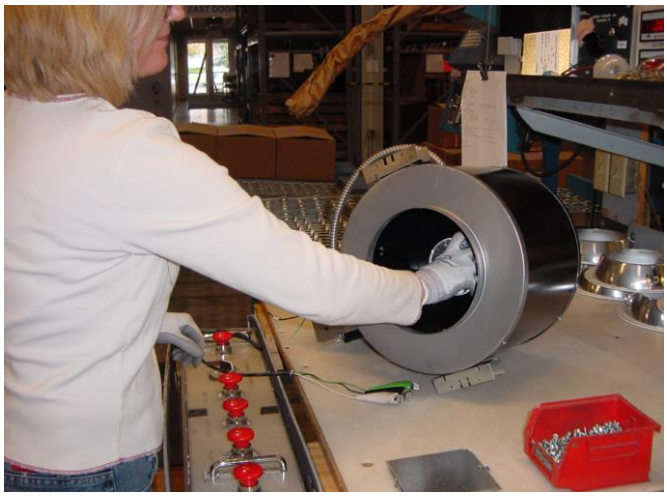
## Step 13: The Activity Score is +1 due to job requiring small range actions (more than 4x per minute). The Final REBA Score = Table C Score + Activity Score

### Final REBA Score = 9

In this case, the final REBA score of 9 indicates high risk and calls for further investigation and engineering and/or work method changes to reduce or eliminate MSD risk (see table on page 1).

After further investigation, it was determined by the worker and the department group leader that a different method could be used to perform this task. See before/after pictures and new REBA results below:

Previous Method



New Method

**A follow-up analysis using the REBA worksheet was performed. Using the new work method, the final REBA score was reduced from 9 to 4.**

For additional help measuring and recording task variables, register for our advanced ergonomic assessment training course. Click here to learn more.

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