

BAB 6

KESIMPULAN DAN SARAN

6.1. Kesimpulan

Berdasarkan hasil penelitian, maka dapat diambil beberapa kesimpulan sebagai berikut:

- a. Meja dan Kursi yang dirancang terbukti menurunkan keluhan kedua operator di *Java Art Stone*
- b. Meja dan Kursi yang dirancang terbukti aman dengan melihat penilaian postur kerja dari katagori yang berbahaya menjadi katagori sedang dan aman.
- c. Meja dan Kursi yang dirancang terbukti menurunkan waktu proses memahat pekerja 1 dari 923 menit menjadi 881 menit dengan mengalami penurunan 4.55% dan pekerja 2 dari 1167 menit menjadi 1080 menit dengan mengalami penurunan 7.455%.
- d. Meja dan Kursi yang dirancang mampu menahan beban material sekitar 70 kg terbukti saat uji coba
- e. Meja dan Kursi yang dirancang mengeluarkan biaya sekitar Rp 888.800,00 yang sesuai dengan keinginan operator dalam proses memahat.

6.2. Saran

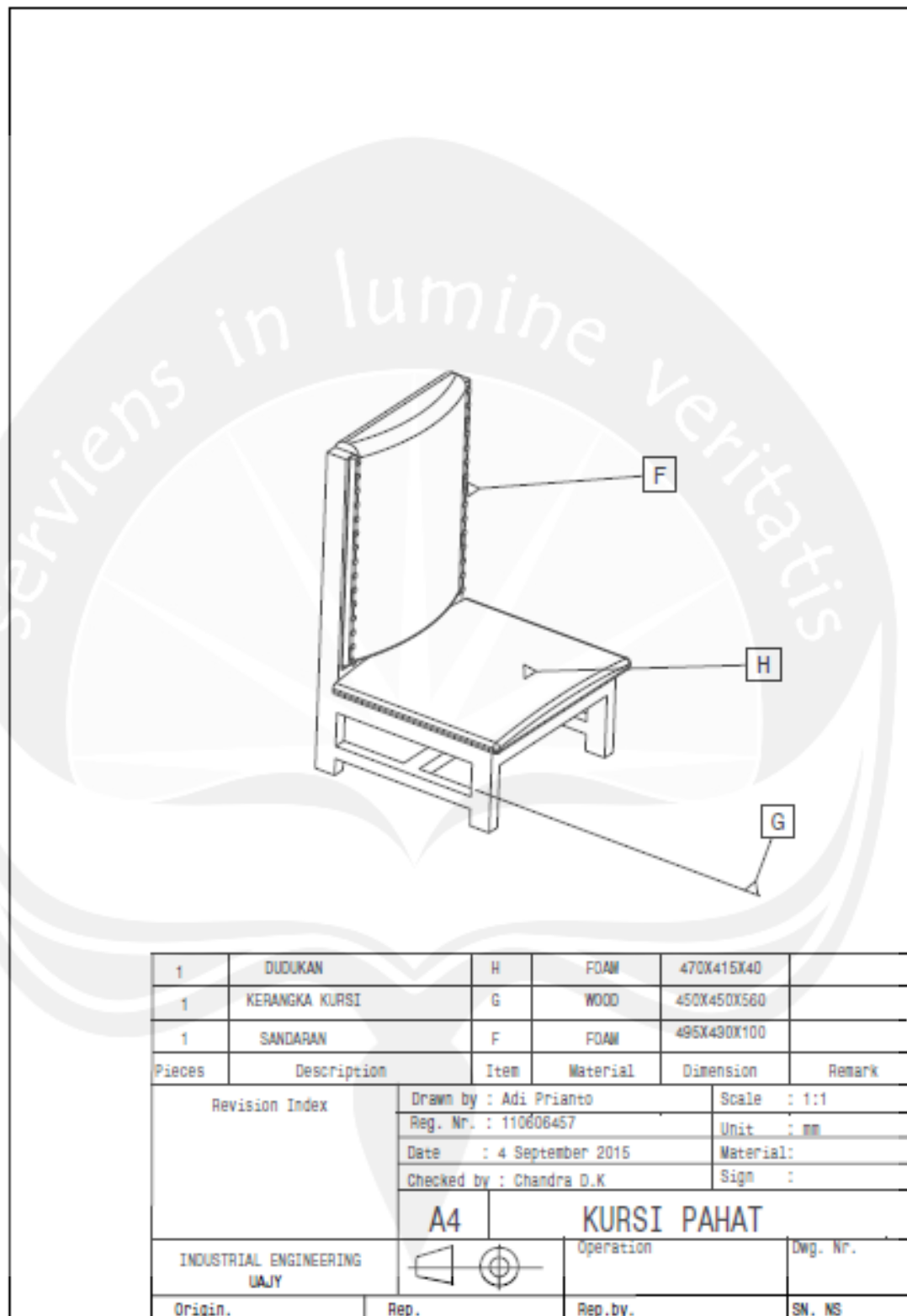
Penulis memberikan saran untuk penelitian selanjutnya agar analisis dilakukan pada seluruh pengrajin Industri Kecil dan Menengah batu alam di wilayah Yogyakarta. Sehingga hasilnya nanti dapat diaplikasikan tidak hanya di *Java Art Stone* saja melainkan dapat digunakan pada IKM batu alam di wilayah.

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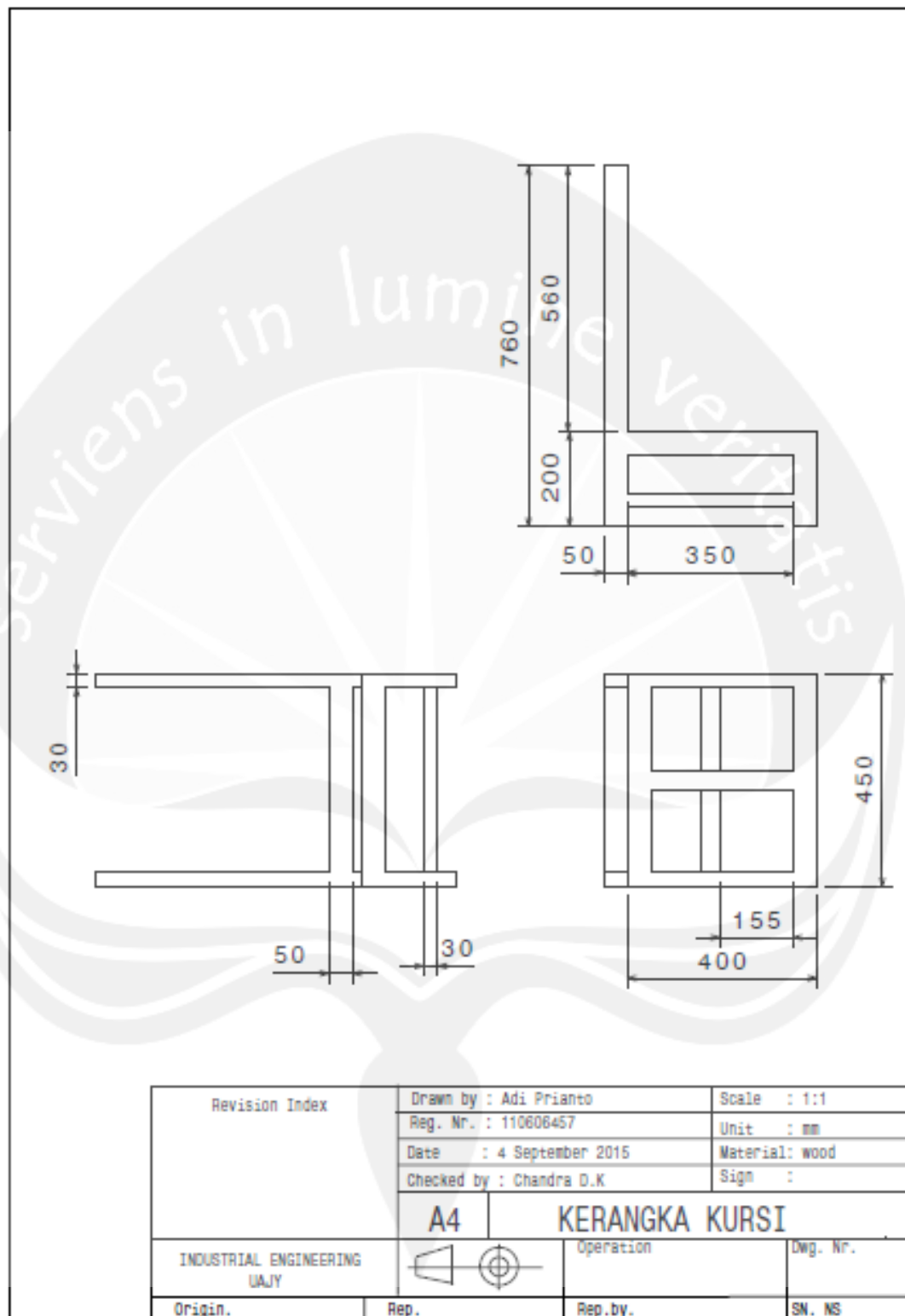
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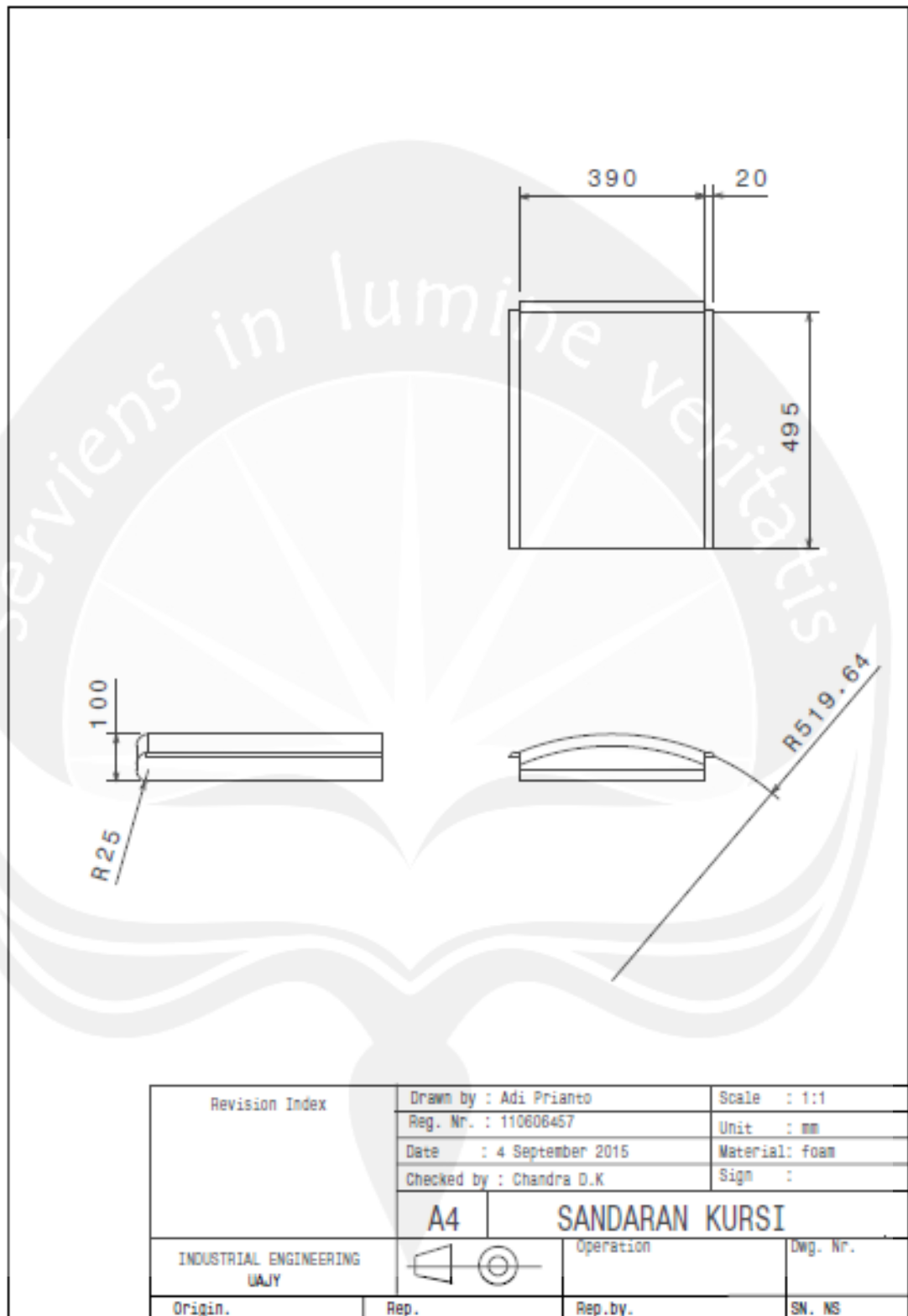
Lampiran 1. Sketa Assembly Kursi



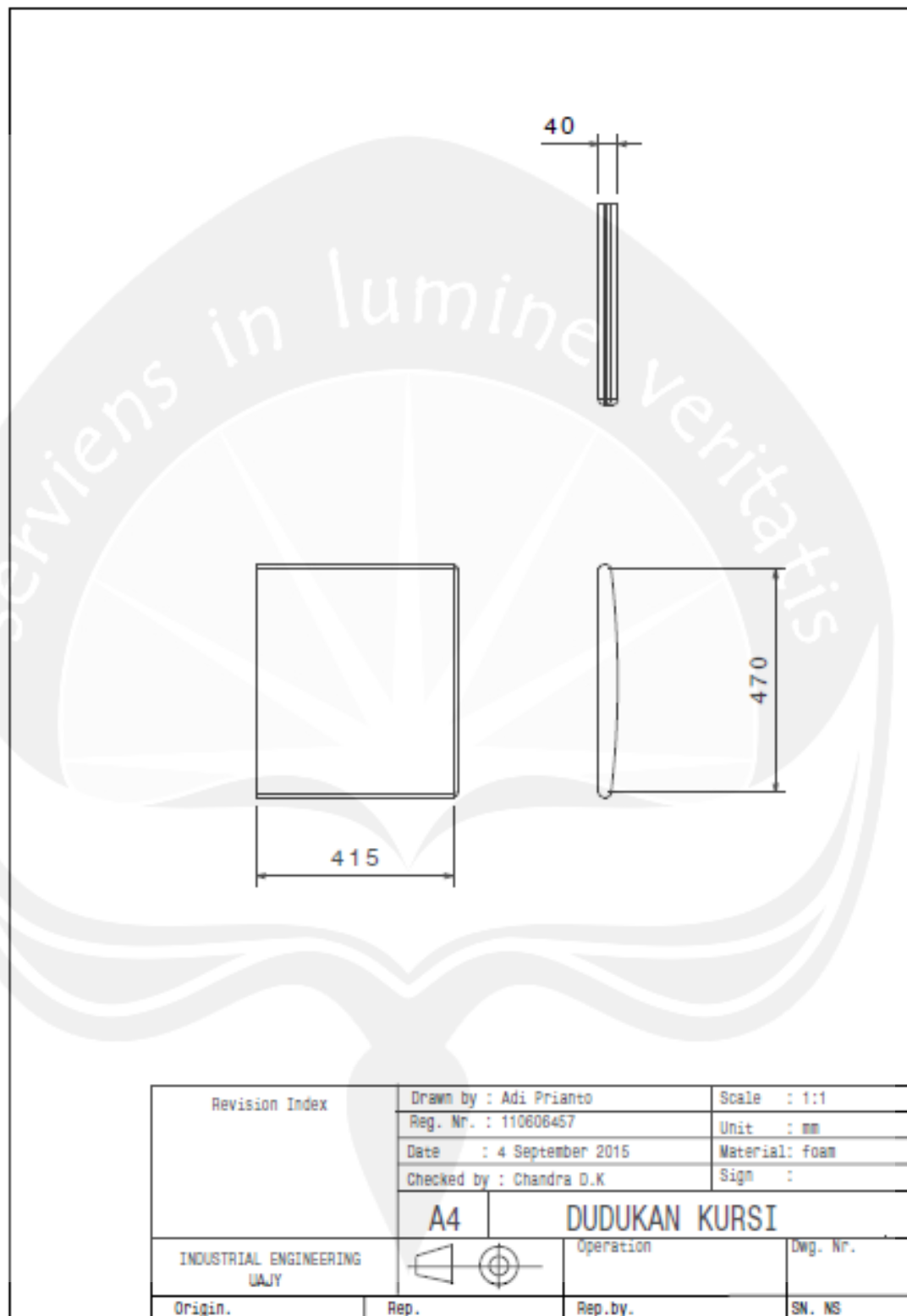
Lampiran 2. Sketsa Kerangka Kursi



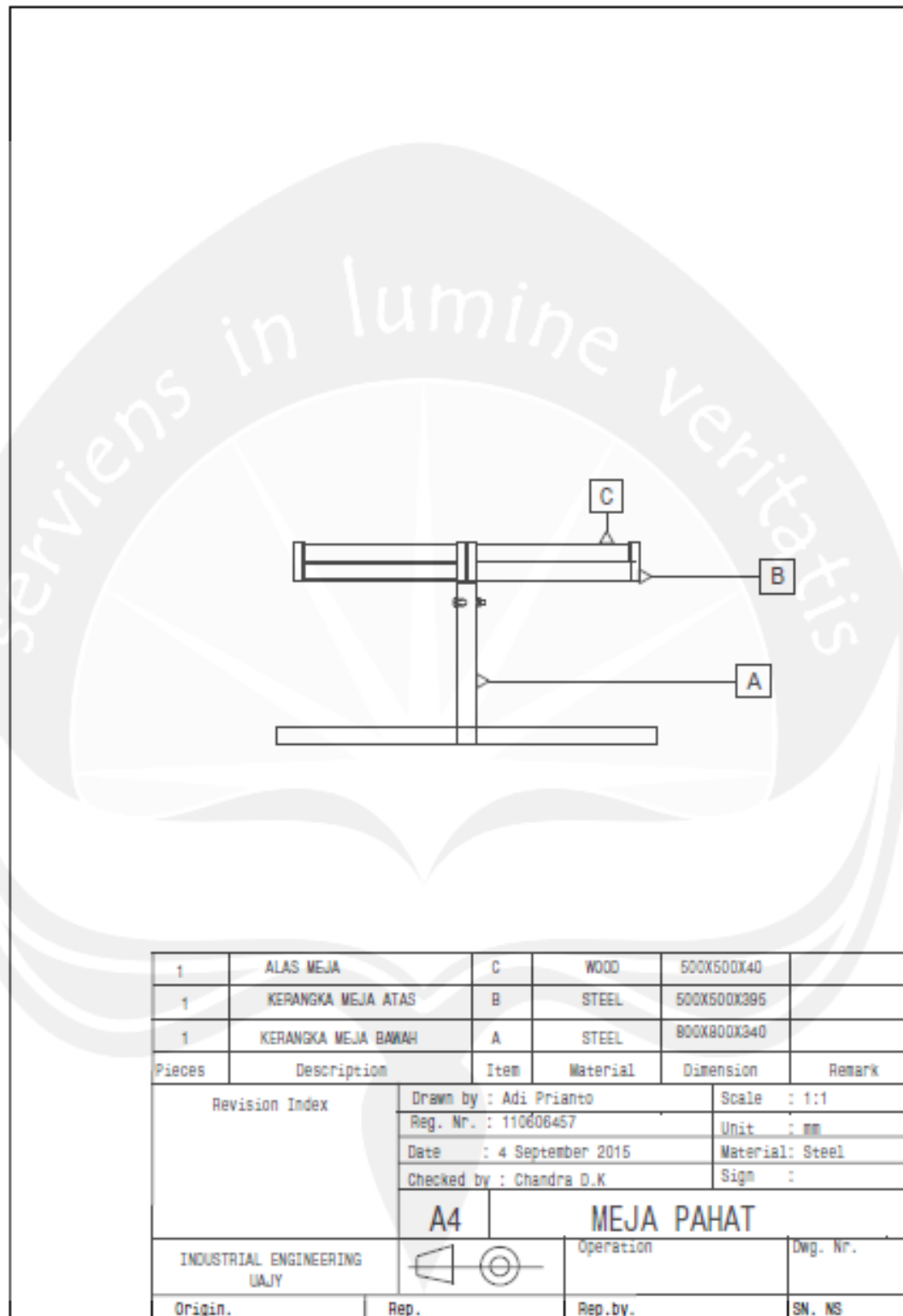
Lampiran 3. Sketsa Sandaran



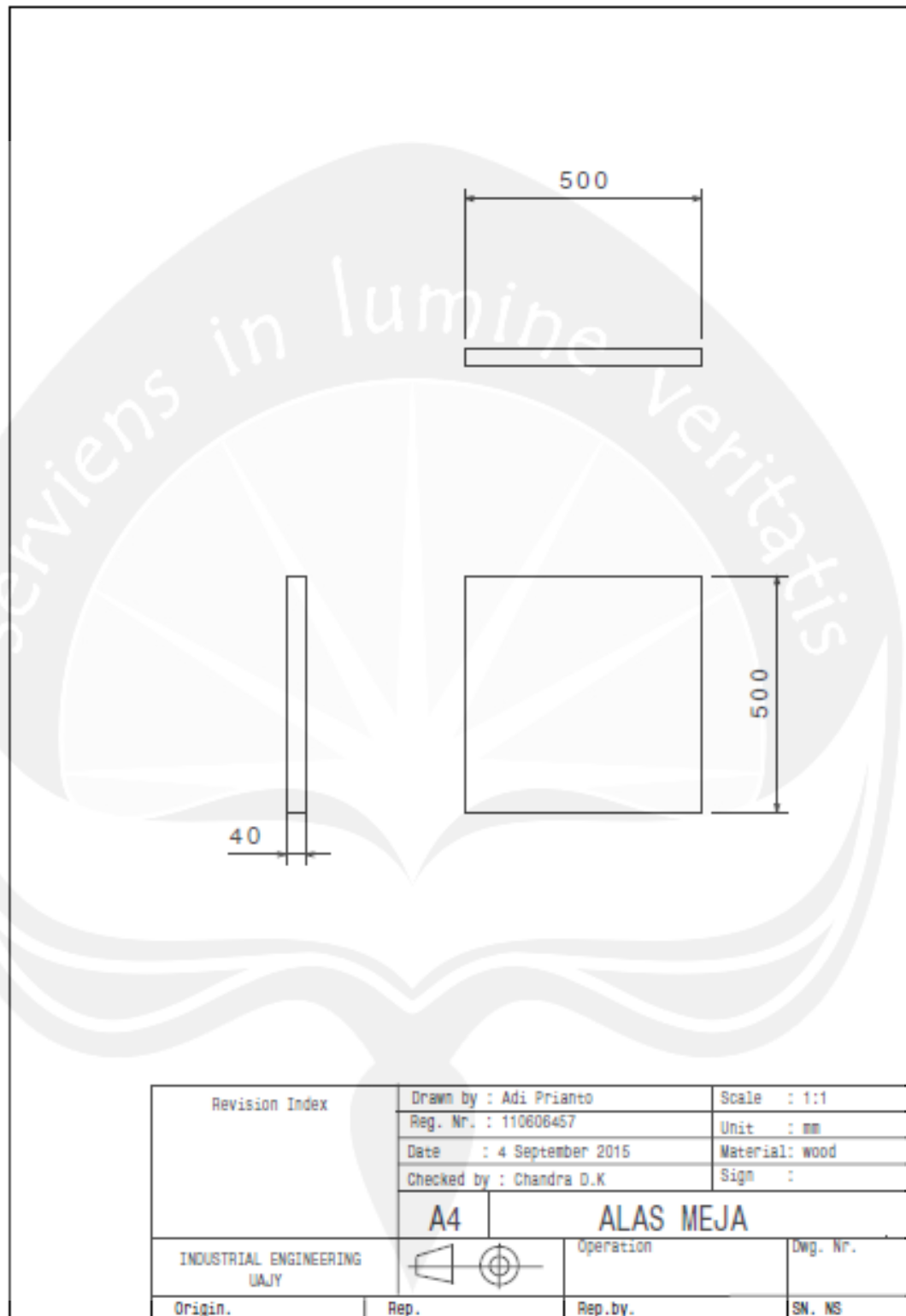
Lampiran 4. Sketsa Dudukan Kursi



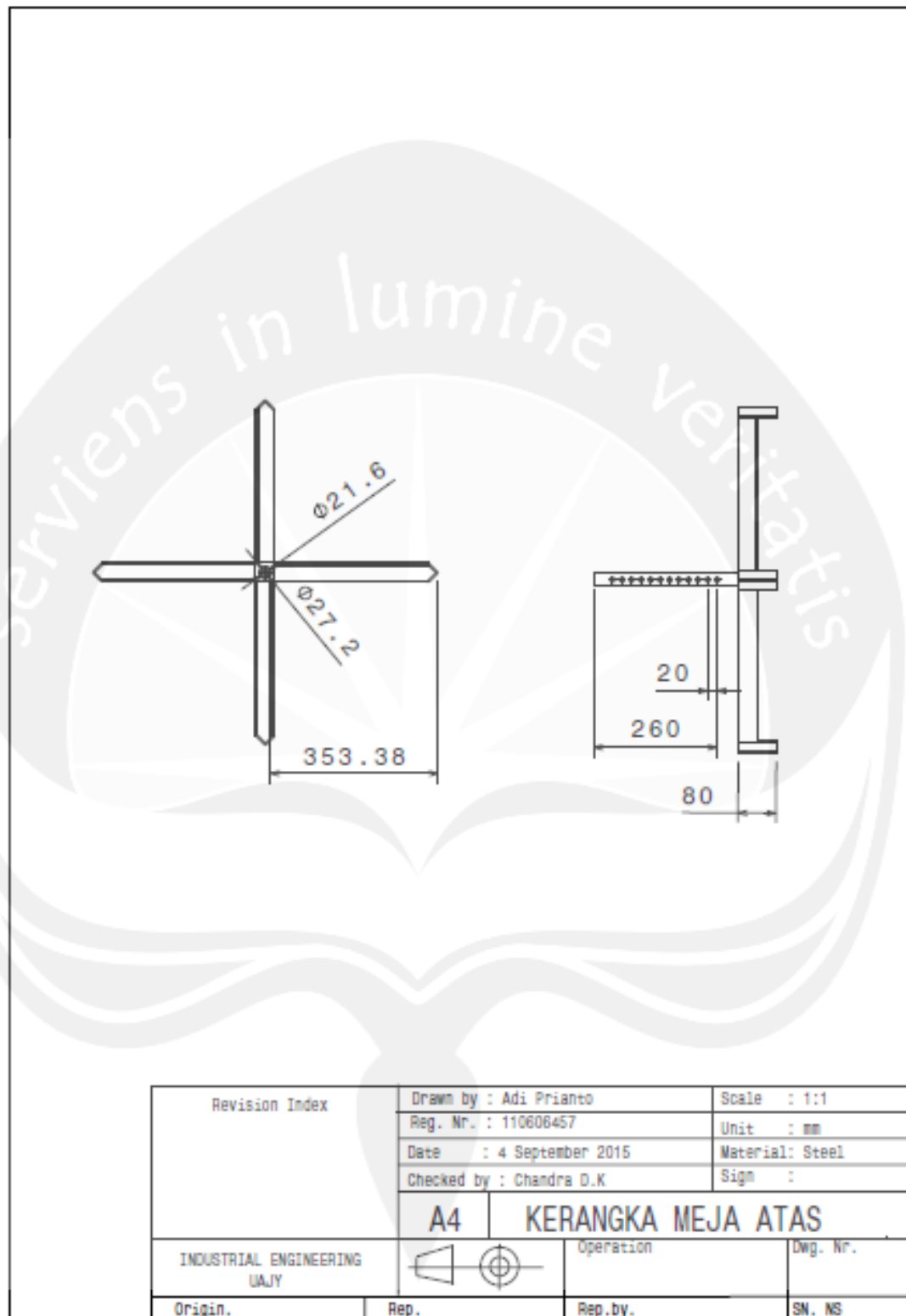
Lampiran 5. Sketsa Assembly Meja Pahat



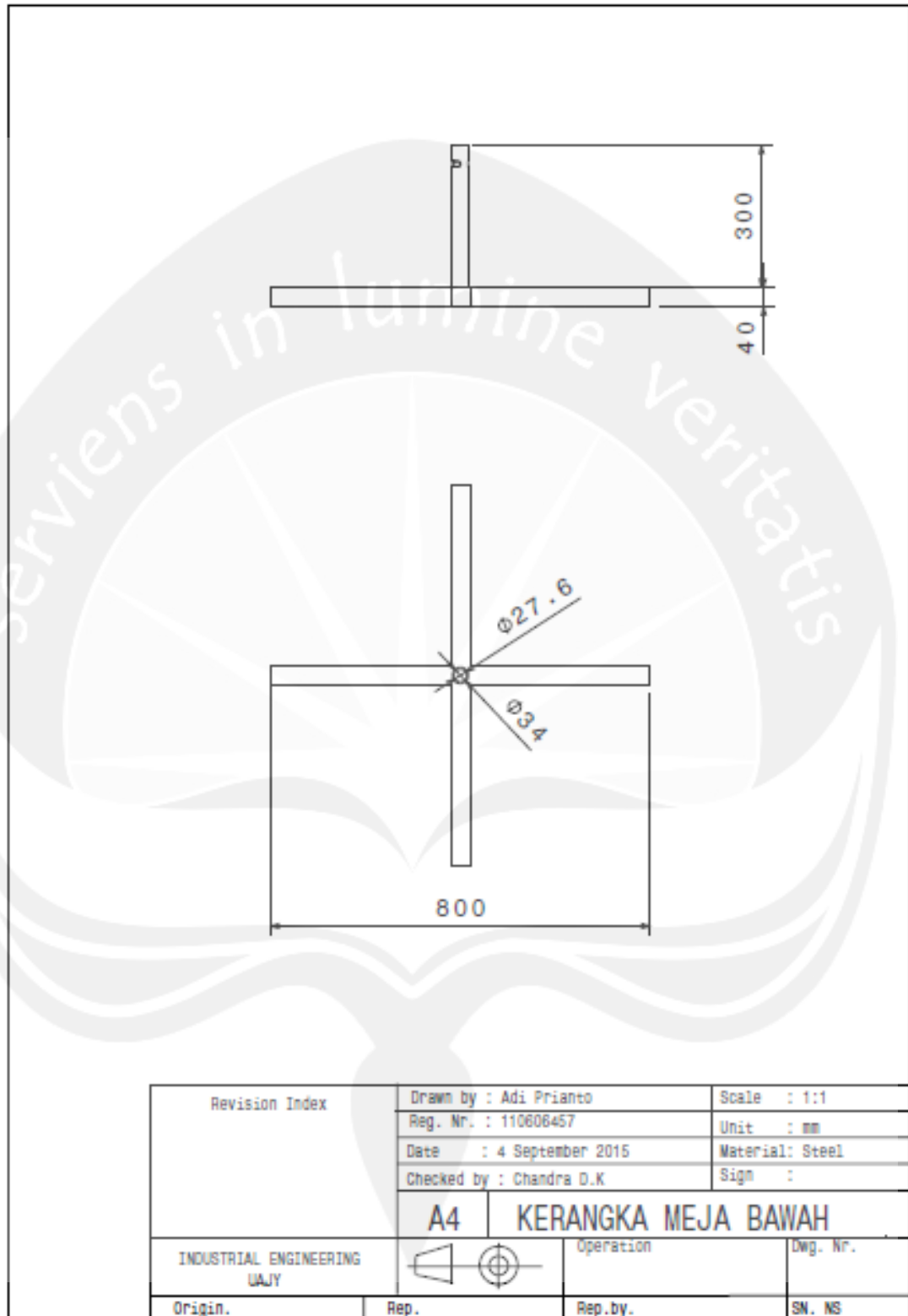
Lampiran 6. Sketsa Alas Meja



Lampiran 7. Sketsa Kerangka Meja Atas



Lampiran 8. Sketsa Kerangka Meja Bawah



Lampiran 9. Kuesioner Atribut Pekerja 1

Kuesioner Perancangan

Dalam rangka Penelitian Tugas Akhir yang bertema Perancangan Fasilitas Kerja Untuk Mengurangi Muskuloskeletal di Industri Kecil Menengah di Java Art Stone pada proses memahat, maka saya yang melakukan penelitian

Nama : Adi Prianto
 NPM : 110606457
 Program : Teknik Industri
 Fakultas Teknologi Industri
 Universitas Atma Jaya Yogyakarta

Mohon kesediaan Saudara, Saudari untuk mengisi Kuesioner berikut. Atas perhatian dan kesediaannya saya ucapkan terima kasih

Nama Operator : Samudro
 Usia : 30

Berikan tanda (✓) pada kolom skor yang menandakan kepentingan dalam fasilitas kerja. Terdapat 5 kriteria yang dapat dipilih, yaitu sangat tidak penting (skor = 1), tidak penting (skor = 2), cukup penting (skor = 3), penting (skor = 4), sangat penting (skor = 5).

No	Atribut	Skor				
		1	2	3	4	5
1	Meminimalkan Keluhan Muskuloskeletal				✓	
2	Komponennya Tidak Melukai Pengguna			✓		
3	Mampu Menahan Beban				✓	
4	Mudah Penyimpanan				✓	
5	Ringan			✓		
6	Proses Pembuatan Terjangkau				✓	

Lampiran 10. Kuesioner Atribut Pekerja 2

Kuesioner Perancangan

Dalam rangka Penelitian Tugas Akhir yang bertema Perancangan Fasilitas Kerja Untuk Mengurangi Muskuloskeletal di Industri Kecil Menengah di Java Art Stone pada proses memahat, maka saya yang melakukan penelitian

Nama : Adi Prianto
 NPM : 110606457
 Program : Teknik Industri
 Fakultas Teknologi Industri
 Universitas Atma Jaya Yogyakarta

Mohon kesediaan Saudara. Saudari untuk mengisi Kuesioner berikut. Atas perhatian dan kesediaannya saya ucapkan terima kasih

Nama Operator : Puji

Usia : 30/06/1987 (28)

Berikan tanda (✓) pada kolom skor yang menandakan kepentingan dalam fasilitas kerja. Terdapat 5 kriteria yang dapat dipilih, yaitu sangat tidak penting (skor = 1), tidak penting (skor = 2), cukup penting (skor = 3), penting (skor = 4), sangat penting (skor = 5).

No	Atribut	Skor				
		1	2	3	4	5
1	Meminimalkan Keluhan Muskuloskeletal	✓				
2	Komponennya Tidak Melukai Pengguna		✓			
3	Mampu Menahan Beban				✓	
4	Mudah Penyimpanan					✓
5	Ringan				✓	
6	Proses Pembuatan Terjangkau				✓	

Lampiran 11. Koesioner Atribut Pekerja 3

Kuesioner Perancangan

Dalam rangka Penelitian Tugas Akhir yang bertema Perancangan Fasilitas Kerja Untuk Mengurangi Muskuloskeletal di Industri Kecil Menengah di Java Art Stone pada proses memahat, maka saya yang melakukan penelitian

Nama : Adi Prianto
 NPM : 110606457
 Program : Teknik Industri
 Fakultas Teknologi Industri
 Universitas Atma Jaya Yogyakarta

Mohon kesediaan Saudara. Saudari untuk mengisi Kuesioner berikut. Atas perhatian dan kesediaannya saya ucapkan terima kasih

Nama Operator : Sudadi

Usia : 27

Berikan tanda (✓) pada kolom skor yang menandakan kepentingan dalam fasilitas kerja. Terdapat 5 kriteria yang dapat dipilih, yaitu sangat tidak penting (skor = 1), tidak penting (skor = 2), cukup penting (skor = 3), penting (skor = 4), sangat penting (skor = 5).

No	Atribut	Skor				
		1	2	3	4	5
1	Meminimalkan Keluhan Muskuloskeletal			✓		
2	Komponennya Tidak Melukai Pengguna		✓			
3	Mampu Menahan Beban				✓	
4	Mudah Penyimpanan			✓		
5	Ringan			✓		
6	Proses Pembuatan Terjangkau				✓	

Lampiran 12. Kuesioner Atribut Pekerja 4

Kuesioner Perancangan

Dalam rangka Penelitian Tugas Akhir yang bertema Perancangan Fasilitas Kerja Untuk Mengurangi Muskuloskeletal di Industri Kecil Menengah di Java Art Stone pada proses memahat, maka saya yang melakukan penelitian

Nama : Adi Prianto
 NPM : 110606457
 Program : Teknik Industri
 Fakultas Teknologi Industri
 Universitas Atma Jaya Yogyakarta

Mohon kesediaan Saudara. Saudari untuk mengisi Kuesioner berikut. Atas perhatian dan kesediaannya saya ucapkan terima kasih

Nama Operator : Babat Ular

Usia : 30

Berikan tanda (✓) pada kolom skor yang menandakan kepentingan dalam fasilitas kerja. Terdapat 5 kriteria yang dapat dipilih, yaitu sangat tidak penting (skor = 1), tidak penting (skor = 2), cukup penting (skor = 3), penting (skor = 4), sangat penting (skor = 5).

No	Atribut	Skor				
		1	2	3	4	5
1	Meminimalkan Keluhan Muskuloskeletal		✓			
2	Komponennya Tidak Melukai Pengguna		✓			
3	Mampu Menahan Beban				✓	
4	Mudah Penyimpanan			✓		
5	Ringan			✓		
6	Proses Pembuatan Terjangkau					✓

Lampiran 13. Kuesioner NBM Awal Pekerja 1

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : *samino*
 Umur/Tgl Lahir : *30*
 Hari, Tanggal :
 Kondisi : Sebelum Perbaikan / ~~Sesudah Perbaikan~~
 Petunjuk : Berikan tanda (✓) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit/kaku di leher bagian atas		✓		
1	Sakit/kaku di leher bagian bawah			✓	
2	Sakit di bahu kiri			✓	
3	Sakit di bahu kanan			✓	
4	Sakit pada lengan atas kiri			✓	
5	Sakit di punggung		✓		
6	Sakit pada lengan atas kanan			✓	
7	Sakit pada pinggang			✓	
8	Sakit pada bokong			✓	
9	Sakit pada pantat		✓		
10	Sakit pada siku kiri		✓		
11	Sakit pada siku kanan		✓		
12	Sakit pada lengan bawah kiri		✓		
13	Sakit pada lengan bawah kanan			✓	
14	Sakit pada pergelangan tangan kiri	✓			
15	Sakit pada pergelangan tangan kanan	✓			
16	Sakit pada tangan kiri	✓			
17	Sakit pada tangan kanan	✓			
18	Sakit pada paha kiri		✓		
19	Sakit pada paha kanan		✓		
20	Sakit pada lutut kiri		✓		
21	Sakit pada lutut kanan		✓		
22	Sakit pada betis kiri		✓		
23	Sakit pada betis kanan		✓		
24	Sakit pada pergelangan kaki kiri	✓			
25	Sakit pada pergelangan kaki kanan	✓			
26	Sakit pada kaki kiri	✓			
27	Sakit pada kaki kanan	✓			

Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 14. Kuesioner NBM Awal Pekerja 2

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : Puji
 Umur/Tgl Lahir : 28, 30 / 06 / 1987
 Hari, Tanggal :
 Kondisi : Sebelum Perbaikan / ~~Sebelum Perbaikan~~ Sesudah Perbaikan
 Petunjuk : Berikan tanda (√) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit/kaku di leher bagian atas		✓		
1	Sakit/kaku di leher bagian bawah		✓		
2	Sakit di bahu kiri		✓		
3	Sakit di bahu kanan		✓		
4	Sakit pada lengan atas kiri		✓		
5	Sakit di punggung		✓		
6	Sakit pada lengan atas kanan			✓	
7	Sakit pada pinggang			✓	
8	Sakit pada bokong		✓		
9	Sakit pada pantat		✓		
10	Sakit pada siku kiri	✓			
11	Sakit pada siku kanan	✓			
12	Sakit pada lengan bawah kiri		✓		
13	Sakit pada lengan bawah kanan		✓		
14	Sakit pada pergelangan tangan kiri	✓			
15	Sakit pada pergelangan tangan kanan	✓			
16	Sakit pada tangan kiri			✓	
17	Sakit pada tangan kanan			✓	
18	Sakit pada paha kiri	✓			
19	Sakit pada paha kanan	✓			
20	Sakit pada lutut kiri	✓			
21	Sakit pada lutut kanan	✓			
22	Sakit pada betis kiri		✓		
23	Sakit pada betis kanan		✓		
24	Sakit pada pergelangan kaki kiri		✓		
25	Sakit pada pergelangan kaki kanan		✓		
26	Sakit pada kaki kiri		✓		
27	Sakit pada kaki kanan		✓		

Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 15. Kuesioner NBM Awal Pekerja 3

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : Sudodi
 Umur/Tgl Lahir : 27
 Hari, Tanggal :
 Kondisi : Sebelum Perbaikan / Sesudah Perbaikan
 Petunjuk : Berikan tanda (√) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit/kaku di leher bagian atas			✓	
1	Sakit/kaku di leher bagian bawah	✓			
2	Sakit di bahu kiri	✓			
3	Sakit di bahu kanan	✓			
4	Sakit pada lengan atas kiri	✓			
5	Sakit di pundung	✓			
6	Sakit pada lengan atas kanan		✓		
7	Sakit pada pinggang		✓		
8	Sakit pada bokong	✓			
9	Sakit pada pantat	✓			
10	Sakit pada siku kiri	✓			
11	Sakit pada siku kanan	✓			
12	Sakit pada lengan bawah kiri	✓			
13	Sakit pada lengan bawah kanan	✓			
14	Sakit pada pergelangan tangan kiri		✓		
15	Sakit pada pergelangan tangan kanan	✓			
16	Sakit pada tangan kiri	✓			
17	Sakit pada tangan kanan	✓			
18	Sakit pada paha kiri	✓			
19	Sakit pada paha kanan	✓			
20	Sakit pada lutut kiri	✓			
21	Sakit pada lutut kanan	✓			
22	Sakit pada betis kiri	✓			
23	Sakit pada betis kanan	✓			
24	Sakit pada pergelangan kaki kiri	✓			
25	Sakit pada pergelangan kaki kanan	✓			
26	Sakit pada kaki kiri	✓			
27	Sakit pada kaki kanan	✓			

Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 16. Kuesioner NBM Awal Pekerja 4

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : Babot Ulin
Umur/Tgl Lahir : 30
Hari, Tanggal :
Kondisi : Sebelum Perbaikan / Sesudah Perbaikan
Petunjuk : Berikan tanda (√) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit kaku di leher bagian atas			✓	
1	Sakit kaku di leher bagian bawah		✓		
2	Sakit di bahu kiri	✓			
3	Sakit di bahu kanan	✓			
4	Sakit pada lengan atas kiri	✓			
5	Sakit di punggung			✓	
6	Sakit pada lengan atas kanan	✓			
7	Sakit pada pinggang			✓	
8	Sakit pada bokong	✓			
9	Sakit pada pantat		✓		
10	Sakit pada siku kiri	✓			
11	Sakit pada siku kanan	✓			
12	Sakit pada lengan bawah kiri	✓			
13	Sakit pada lengan bawah kanan	✓			
14	Sakit pada pergelangan tangan kiri	✓			
15	Sakit pada pergelangan tangan kanan	✓			
16	Sakit pada tangan kiri	✓			
17	Sakit pada tangan kanan	✓			
18	Sakit pada paha kiri	✓			
19	Sakit pada paha kanan	✓			
20	Sakit pada lutut kiri	✓			
21	Sakit pada lutut kanan	✓			
22	Sakit pada betis kiri	✓			
23	Sakit pada betis kanan	✓			
24	Sakit pada pergelangan kaki kiri	✓			
25	Sakit pada pergelangan kaki kanan	✓			
26	Sakit pada kaki kiri	✓			
27	Sakit pada kaki kanan	✓			

Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 17. Kuesioner NBM Sekarang Pekerja 1

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : *Samino*
 Umur/Tgl Lahir : *30*
 Hari, Tanggal :
 Kondisi : *Sebelum Perbaikan / Sesudah Perbaikan*
 Petunjuk : Berikan tanda (√) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit/kaku di leher bagian atas	✓			
1	Sakit/kaku di leher bagian bawah	✓			
2	Sakit di bahu kiri		✓		
3	Sakit di bahu kanan		✓		
4	Sakit pada lengan atas kiri		✓		
5	Sakit di punggung	✓			
6	Sakit pada lengan atas kanan		✓		
7	Sakit pada pinggang		✓		
8	Sakit pada bokong		✓		
9	Sakit pada pantat		✓		
10	Sakit pada siku kiri		✓		
11	Sakit pada siku kanan		✓		
12	Sakit pada lengan bawah kiri	✓			
13	Sakit pada lengan bawah kanan	✓			
14	Sakit pada pergelangan tangan kiri		✓		
15	Sakit pada pergelangan tangan kanan		✓		
16	Sakit pada tangan kiri		✓		
17	Sakit pada tangan kanan		✓		
18	Sakit pada paha kiri	✓			
19	Sakit pada paha kanan	✓			
20	Sakit pada lutut kiri	✓			
21	Sakit pada lutut kanan	✓			
22	Sakit pada betis kiri	✓			
23	Sakit pada betis kanan	✓			
24	Sakit pada pergelangan kaki kiri	✓			
25	Sakit pada pergelangan kaki kanan	✓			
26	Sakit pada kaki kiri	✓			
27	Sakit pada kaki kanan	✓			

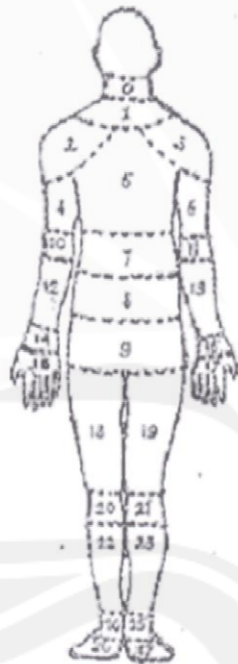
Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 18. Kuesioner NBM Sekarang Pekerja 2

Kuesioner Keluhan Muskuloskeletal

Nordic Body Map

Nama : Puji
 Umur/Tgl Lahir : 28. 30/06/1987
 Hari, Tanggal :
 Kondisi : Sebelum Perbaikan / Sesudah Perbaikan
 Petunjuk : Berikan tanda (√) pada kolom tingkat keluhan yang sesuai dengan kondisi jenis keluhan



NO	JENIS KELUHAN	TINGKAT KELUHAN			
		A	B	C	D
0	Sakit/kaku di leher bagian atas	✓			
1	Sakit/kaku di leher bagian bawah	✓			
2	Sakit di bahu kiri		✓		
3	Sakit di bahu kanan		✓		
4	Sakit pada lengan atas kiri		✓		
5	Sakit di punggung		✓		
6	Sakit pada lengan atas kanan		✓		
7	Sakit pada pinggang		✓		
8	Sakit pada bokong	✓			
9	Sakit pada pantat	✓			
10	Sakit pada siku kiri	✓			
11	Sakit pada siku kanan	✓			
12	Sakit pada lengan bawah kiri	✓			
13	Sakit pada lengan bawah kanan	✓			
14	Sakit pada pergelangan tangan kiri	✓			
15	Sakit pada pergelangan tangan kanan	✓			
16	Sakit pada tangan kiri		✓		
17	Sakit pada tangan kanan		✓		
18	Sakit pada paha kiri	✓			
19	Sakit pada paha kanan	✓			
20	Sakit pada lutut kiri	✓			
21	Sakit pada lutut kanan	✓			
22	Sakit pada betis kiri	✓			
23	Sakit pada betis kanan	✓			
24	Sakit pada pergelangan kaki kiri	✓			
25	Sakit pada pergelangan kaki kanan	✓			
26	Sakit pada kaki kiri	✓			
27	Sakit pada kaki kanan	✓			

Keterangan : A: Tidak sakit, B: Agak sakit, C: Sakit, D: Sakit sekali

Lampiran 19. Worksheet REBA Awal Pekerja 1 bagian Kanan

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Task Name: **Saminio Kirona Alun**

Date: _____

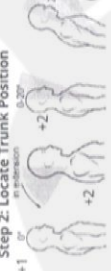
by: **Adi Pionito**

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

 +1
 Neck Score: **+3**

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

Step 2: Locate Trunk Position

 +1
 Trunk Score: **+4**

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

Step 3: Legs

 +1
 Leg Score: **+1**

Step 4: Look-up Posture Score in Table A
 Using values from steps 1-3 above, Locate score in Table A

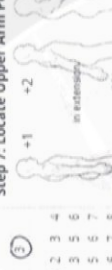
Score A	1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1
11	1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

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 Force / Load Score

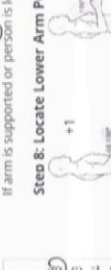
Step 6: Score A, Find Row in Table C
 Add values from steps 4 & 5 to obtain Score A. Find Row in Table C

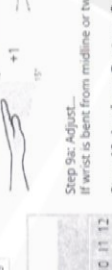
Scoring
 1 = Negligible Risk
 2-3 = Low Risk. Change may be needed.
 4-5 = Medium Risk. Further investigation. Change Soon.
 6-10 = High Risk. Investigate and Implement Change.
 11+ = Very High Risk. Implement Change

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:

 +1
 Upper Arm Score: **+4**

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

Step 8: Locate Lower Arm Position:

 +1
 Lower Arm Score: **+2**

Step 9: Locate Wrist Position:

 +1
 Wrist Score: **+3**

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

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

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

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

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.

Step 13: Activity Score
 +1 or more body parts are held for longer than 1 minute (static)
 +2 repeated small range actions (more than 4x per minute)
 +3 Action causes rapid large range changes in postures or unstable base

Scoring
 1 = Negligible Risk
 2-3 = Low Risk. Change may be needed.
 4-5 = Medium Risk. Further investigation. Change Soon.
 6-10 = High Risk. Investigate and Implement Change.
 11+ = Very High Risk. Implement Change

Final Scores:
 Table C Score: **9** + Activity Score: **1** = **10** REBA Score

Lampiran 20. Worksheet REBA Awal Pekerja 1 bagian Kiri

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Task Name: *Samin0 Kiri*
by: *Adi Priono*

Date: _____

Scores

Neck: 1 2 3 4 5 6 7 8 9 10 11 12

Legs: 1 2 3 4 5 6 7 8 9 10 11 12

Trunk: 1 2 3 4 5 6 7 8 9 10 11 12

Posture: 1 2 3 4 5 6 7 8 9 10 11 12

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

10-20° **+1** 20-30° **+2** 30-45° **+3** 45-60° **+4**

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

Step 2: Locate Trunk Position

10-20° **+1** 20-30° **+2** 30-45° **+3** 45-60° **+4**

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

Step 3: Legs

Adjust: 30-45° **+1** 45-60° **+2** 60-75° **+3** 75-90° **+4**

Step 4: Look-up Posture Score in Table A

Using values from steps 1-3 above, locate score in Table 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** 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

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

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:

0-20° **+1** 20-45° **+2** 45-90° **+3** 90°+ **+4**

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

Step 8: Locate Lower Arm Position:

0-20° **+1** 20-45° **+2** 45-90° **+3** 90°+ **+4**

Step 9: Locate Wrist Position:

0-15° **+1** 15-30° **+2** 30-45° **+3** 45-60° **+4**

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

Step 11: Add Coupling Score

Well fitted, hand not ideal hand hold or coupling: **+0**
Acceptable with another body part: **+1**
Hand held not acceptable but possible: **+2**
No handles, awkward, unsafe with any body part: **+3**

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.

Step 13: Activity Score

+1 1 or more body parts are held for longer than 1 minute (static)
+2 repeated small range actions (more than 4x per minute)
+3 Action causes rapid large range changes in postures or unstable base

Table C

Score A	Score B	Table C Score	Activity Score	REBA Score
1	1	1	1	1
1	2	2	1	2
1	3	3	1	3
1	4	4	1	4
1	5	5	1	5
1	6	6	1	6
1	7	7	1	7
1	8	8	1	8
1	9	9	1	9
1	10	10	1	10
1	11	11	1	11
1	12	12	1	12
2	1	1	2	3
2	2	2	2	4
2	3	3	2	5
2	4	4	2	6
2	5	5	2	7
2	6	6	2	8
2	7	7	2	9
2	8	8	2	10
2	9	9	2	11
2	10	10	2	12
2	11	11	2	13
2	12	12	2	14
3	1	1	3	4
3	2	2	3	5
3	3	3	3	6
3	4	4	3	7
3	5	5	3	8
3	6	6	3	9
3	7	7	3	10
3	8	8	3	11
3	9	9	3	12
3	10	10	3	13
3	11	11	3	14
3	12	12	3	15
4	1	1	4	5
4	2	2	4	6
4	3	3	4	7
4	4	4	4	8
4	5	5	4	9
4	6	6	4	10
4	7	7	4	11
4	8	8	4	12
4	9	9	4	13
4	10	10	4	14
4	11	11	4	15
4	12	12	4	16
5	1	1	5	6
5	2	2	5	7
5	3	3	5	8
5	4	4	5	9
5	5	5	5	10
5	6	6	5	11
5	7	7	5	12
5	8	8	5	13
5	9	9	5	14
5	10	10	5	15
5	11	11	5	16
5	12	12	5	17
6	1	1	6	7
6	2	2	6	8
6	3	3	6	9
6	4	4	6	10
6	5	5	6	11
6	6	6	6	12
6	7	7	6	13
6	8	8	6	14
6	9	9	6	15
6	10	10	6	16
6	11	11	6	17
6	12	12	6	18
7	1	1	7	8
7	2	2	7	9
7	3	3	7	10
7	4	4	7	11
7	5	5	7	12
7	6	6	7	13
7	7	7	7	14
7	8	8	7	15
7	9	9	7	16
7	10	10	7	17
7	11	11	7	18
7	12	12	7	19
8	1	1	8	9
8	2	2	8	10
8	3	3	8	11
8	4	4	8	12
8	5	5	8	13
8	6	6	8	14
8	7	7	8	15
8	8	8	8	16
8	9	9	8	17
8	10	10	8	18
8	11	11	8	19
8	12	12	8	20
9	1	1	9	10
9	2	2	9	11
9	3	3	9	12
9	4	4	9	13
9	5	5	9	14
9	6	6	9	15
9	7	7	9	16
9	8	8	9	17
9	9	9	9	18
9	10	10	9	19
9	11	11	9	20
9	12	12	9	21
10	1	1	10	11
10	2	2	10	12
10	3	3	10	13
10	4	4	10	14
10	5	5	10	15
10	6	6	10	16
10	7	7	10	17
10	8	8	10	18
10	9	9	10	19
10	10	10	10	20
10	11	11	10	21
10	12	12	10	22
11	1	1	11	12
11	2	2	11	13
11	3	3	11	14
11	4	4	11	15
11	5	5	11	16
11	6	6	11	17
11	7	7	11	18
11	8	8	11	19
11	9	9	11	20
11	10	10	11	21
11	11	11	11	22
11	12	12	11	23
12	1	1	12	13
12	2	2	12	14
12	3	3	12	15
12	4	4	12	16
12	5	5	12	17
12	6	6	12	18
12	7	7	12	19
12	8	8	12	20
12	9	9	12	21
12	10	10	12	22
12	11	11	12	23
12	12	12	12	24

9 + 1 = 10

Lampiran 21. Worksheet REBA Awal Pekerja 2 bagian Kanan

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

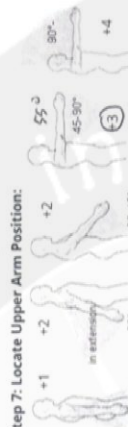
Date: _____

Task Name: Apil Karton Awal

by: Adli Pricantho

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:



20° +1

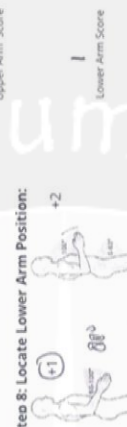
20°-45° +2

45-90° +3

90° +4

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

Step 8: Locate Lower Arm Position:



0° +1

10° +2

10-15° +3

15-20° +4

20-25° +5

25-30° +6

30-35° +7

35-40° +8

40-45° +9

45-50° +10

50-55° +11

55-60° +12

60-65° +13

65-70° +14

70-75° +15

75-80° +16

80-85° +17

85-90° +18

90-95° +19

95-100° +20

100-105° +21

105-110° +22

110-115° +23

115-120° +24

120-125° +25

125-130° +26

130-135° +27

135-140° +28

140-145° +29

145-150° +30

150-155° +31

155-160° +32

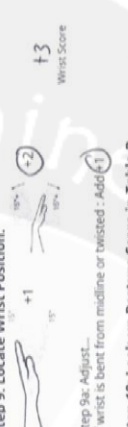
160-165° +33

165-170° +34

170-175° +35

175-180° +36

Step 9: Locate Wrist Position:



0° +1

10° +2

10-15° +3

15-20° +4

20-25° +5

25-30° +6

30-35° +7

35-40° +8

40-45° +9

45-50° +10

50-55° +11

55-60° +12

60-65° +13

65-70° +14

70-75° +15

75-80° +16

80-85° +17

85-90° +18

90-95° +19

95-100° +20

100-105° +21

105-110° +22

110-115° +23

115-120° +24

120-125° +25

125-130° +26

130-135° +27

135-140° +28

140-145° +29

145-150° +30

150-155° +31

155-160° +32

160-165° +33

165-170° +34

170-175° +35

175-180° +36

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

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

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.

Step 13: Activity Score
+1 or more body parts are held for longer than 1 minute (static)
+2 Repeated small range actions (more than 4x per minute)
+3 Action causes rapid large range changes in postures or unstable base

Table A

	1	2	3	4	5	6	7	8	9	10	11	12
Legs	1	2	3	4	5	6	7	8	9	10	11	12
Trunk	1	2	3	4	5	6	7	8	9	10	11	12
Posture	1	2	3	4	5	6	7	8	9	10	11	12
Score	1	2	3	4	5	6	7	8	9	10	11	12

Table B

	1	2	3	4	5	6	7	8	9	10	11	12
Wrist	1	2	3	4	5	6	7	8	9	10	11	12
Upper Arm	1	2	3	4	5	6	7	8	9	10	11	12
Score	1	2	3	4	5	6	7	8	9	10	11	12

Table C

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

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Task Name: Pagi Kiri Awal

By: Adi Prianto

Dates:

Step 1: Locate Neck Position

10-20° +1

20-30° +2

30-40° +3

40-50° +4

50-60° +5

60-70° +6

70-80° +7

80-90° +8

90-100° +9

100-110° +10

110-120° +11

120-130° +12

130-140° +13

140-150° +14

150-160° +15

160-170° +16

170-180° +17

180-190° +18

190-200° +19

200-210° +20

210-220° +21

220-230° +22

230-240° +23

240-250° +24

250-260° +25

260-270° +26

270-280° +27

280-290° +28

290-300° +29

300-310° +30

310-320° +31

320-330° +32

330-340° +33

340-350° +34

350-360° +35

360-370° +36

370-380° +37

380-390° +38

390-400° +39

400-410° +40

410-420° +41

420-430° +42

430-440° +43

440-450° +44

450-460° +45

460-470° +46

470-480° +47

480-490° +48

490-500° +49

500-510° +50

510-520° +51

520-530° +52

530-540° +53

540-550° +54

550-560° +55

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660-670° +66

670-680° +67

680-690° +68

690-700° +69

700-710° +70

710-720° +71

720-730° +72

730-740° +73

740-750° +74

750-760° +75

760-770° +76

770-780° +77

780-790° +78

790-800° +79

800-810° +80

810-820° +81

820-830° +82

830-840° +83

840-850° +84

850-860° +85

860-870° +86

870-880° +87

880-890° +88

890-900° +89

900-910° +90

910-920° +91

920-930° +92

930-940° +93

940-950° +94

950-960° +95

960-970° +96

970-980° +97

980-990° +98

990-1000° +99

1000-1010° +100

1010-1020° +101

1020-1030° +102

1030-1040° +103

1040-1050° +104

1050-1060° +105

1060-1070° +106

1070-1080° +107

1080-1090° +108

1090-1100° +109

1100-1110° +110

1110-1120° +111

1120-1130° +112

1130-1140° +113

1140-1150° +114

1150-1160° +115

1160-1170° +116

1170-1180° +117

1180-1190° +118

1190-1200° +119

1200-1210° +120

1210-1220° +121

1220-1230° +122

1230-1240° +123

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1250-1260° +125

1260-1270° +126

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1290-1300° +129

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1370-1380° +137

1380-1390° +138

1390-1400° +139

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1430-1440° +143

1440-1450° +144

1450-1460° +145

1460-1470° +146

1470-1480° +147

1480-1490° +148

1490-1500° +149

1500-1510° +150

1510-1520° +151

1520-1530° +152

1530-1540° +153

1540-1550° +154

1550-1560° +155

1560-1570° +156

1570-1580° +157

1580-1590° +158

1590-1600° +159

1600-1610° +160

1610-1620° +161

1620-1630° +162

1630-1640° +163

1640-1650° +164

1650-1660° +165

1660-1670° +166

1670-1680° +167

1680-1690° +168

1690-1700° +169

1700-1710° +170

1710-1720° +171

1720-1730° +172

1730-1740° +173

1740-1750° +174

1750-1760° +175

1760-1770° +176

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1790-1800° +179

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2040-2050° +204

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2060-2070° +206

2070-2080° +207

2080-2090° +208

2090-2100° +209

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2120-2130° +212

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2140-2150° +214

2150-2160° +215

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2220-2230° +222

2230-2240° +223

2240-2250° +224

2250-2260° +225

2260-2270° +226

2270-2280° +227

2280-2290° +228

2290-2300° +229

2300-2310° +230

2310-2320° +231

2320-2330° +232

2330-2340° +233

2340-2350° +234

2350-2360° +235

2360-2370° +236

2370-2380° +237

2380-2390° +238

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2470-2480° +247

2480-2490° +248

2490-2500° +249

2500-2510° +250

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2550-2560° +255

2560-2570° +256

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2590-2600° +259

2600-2610° +260

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2660-2670° +266

2670-2680° +267

2680-2690° +268

2690-2700° +269

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2750-2760° +275

2760-2770° +276

2770-2780° +277

2780-2790° +278

2790-2800° +279

2800-2810° +280

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2830-2840° +283

2840-2850° +284

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2950-2960° +295

2960-2970° +296

2970-2980° +297

2980-2990° +298

2990-3000° +299

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3010-3020° +301

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3040-3050° +304

3050-3060° +305

3060-3070° +306

3070-3080° +307

3080-3090° +308

3090-3100° +309

3100-3110° +310

3110-3120° +311

3120-3130° +312

3130-3140° +313

3140-3150° +314

3150-3160° +315

3160-3170° +316

3170-3180° +317

3180-3190° +318

3190-3200° +319

3200-3210° +320

3210-3220° +321

3220-3230° +322

3230-3240° +323

3240-3250° +324

3250-3260° +325

3260-3270° +326

3270-3280° +327

3280-3290° +328

3290-3300° +329

3300-3310° +330

3310-3320° +331

3320-3330° +332

3330-3340° +333

3340-3350° +334

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3370-3380° +337

3380-3390° +338

3390-3400° +339

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3570-3580° +357

3580-3590° +358

3590-3600° +359

3600-3610° +360

3610-3620° +361

3620-3630° +362

3630-3640° +363

3640-3650° +364

3650-3660° +365

3660-3670° +366

3670-3680° +367

3680-3690° +368

3690-3700° +369

3700-3710° +370

3710-3720° +371

3720-3730° +372

3730-3740° +373

3740-3750° +374

3750-3760° +375

3760-3770° +376

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3790-3800° +379

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3820-3830° +382

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3840-3850° +384

3850-3860° +385

3860-3870° +386

3870-3880° +387

3880-3890° +388

3890-3900° +389

3900-3910° +390

3910-3920° +391

3920-3930° +392

3930-3940° +393

3940-3950° +394

3950-3960° +395

3960-3970° +396

3970-3980° +397

3980-3990° +398

3990-4000° +399

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4010-4020° +401

4020-4030° +402

4030-4040° +403

4040-4050° +404

4050-4060° +405

4060-4070° +406

4070-4080° +407

4080-4090° +408

4090-4100° +409

4100-4110° +410

4110-4120° +411

4120-4130° +412

4130-4140° +413

4140-4150° +414

4150-4160° +415

4160-4170° +416

4170-4180° +417

4180-4190° +418

4190-4200° +419

4200-4210° +420

4210-4220° +421

4220-4230° +422

4230-4240° +423

4240-4250° +424

4250-4260° +425

4260-4270° +426

4270-4280° +427

4280-4290° +428

4290-4300° +429

4300-4310° +430

4310-4320° +431

4320-4330° +432

4330-4340° +433

4340-4350° +434

4350-4360° +435

4360-4370° +436

4370-4380° +437

4380-4390° +438

4390-4400° +439

4400-4410° +440

4410-4420° +441

4420-4430° +442

4430-4440° +443

4440-4450° +444

4450-4460° +445

4460-4470° +446

4470-4480° +447

4480-4490° +448

4490-4500° +449

4500-4510° +450

4510-4520° +451

4520-4530° +452

4530-4540° +453

4540-4550° +454

4550-4560° +455

4560-4570° +456

4570-4580° +457

4580-4590° +458

4590-4600° +459

4600-4610° +460

4610-4620° +461

4620-4630° +462

4630-4640° +463

4640-4650° +464

4650-4660° +465

4660-4670° +466

4670-4680° +467

4680-4690° +468

4690-4700° +469

4700-4710° +470

4710-4720° +471

4720-4730° +472

4730-4740° +473

4740-4750° +474

4750-4760° +475

4760-4770° +476

4770-4780° +477

4780-4790° +478

4790-4800° +479

4800-4810° +480

4810-4820° +481

4820-4830° +482

4830-4840° +483

4840-4850° +484

4850-4860° +485

4860-4870° +486

4870-4880° +487

4880-4890° +488

4890-4900° +489

4900-4910° +490

4910-4920° +491

4920-4930° +492

4930-4940° +493

4940-4950° +494

4950-4960° +495

4960-4970° +496

4970-4980° +497

4980-4990° +498

4990-5000° +499

5000-5010° +500

5010-5020° +501

5020-5030° +502

5030-5040° +503

5040-5050° +504

5050-5060° +505

5060-5070° +506

5070-5080° +507

5080-5090° +508

5090-5100° +509

5100-5110° +510

5110-5120° +511

5120-5130° +512

5130-5140° +513

5140-5150° +514

5150-5160° +515

5160-5170° +516

5170-5180° +517

5180-5190° +518

5190-5200° +519

5200-5210° +520

5210-5220° +521

5220-5230° +522

5230-5240° +523

5240-5250° +524

5250-5260° +525

5260-5270° +526

5270-5280° +527

5280-5290° +528

5290-5300° +529

5300-5310° +530

5310-5320° +531

5320-5330° +532

5330-5340° +533

5340-5350° +534

5350-5360° +535

5360-5370° +536

5370-5380° +537

5380-5390° +538

5390-5400° +539

5400-5410° +540

5410-5420° +541

5420-5430° +542

5430-5440° +543

5440-5450° +544

5450-5460° +545

5460-5470° +546

5470-5480° +547

5480-5490° +548

5490-5500° +549

5500-5510° +550

5510-5520° +551

5520-5530° +552

5530-5540° +553

5540-5550° +554

5550-5560° +555

5560-5570° +556

5570-5580° +557

5580-5590° +558

5590-5600° +559

5600-5610° +560

5610-5620° +561

5620-5630° +562

5630-5640° +563

5640-5650° +564

5650-5660° +565

5660-5670° +566

5670-5680° +567

5680-5690° +568

5690-5700° +569

5700-5710° +570

5710-5720° +571

5720-5730° +572

5730-5740° +573

5740-5750° +574

5750-5760° +575

5760-5770° +576

5770-5780° +577

5780-5790° +578

5790-5800° +579

5800-5810° +580

5810-5820° +581

5820-5830° +582

5830-5840° +583

5840-5850° +584

5850-5860° +585

5860-5870° +586

5870-5880° +587

5880-5890° +588

5890-5900° +589

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5920-5930° +592

5930-5940° +593

5940-5950° +594

5950-5960° +595

5960-5970° +596

5970-5980° +597

5980-5990° +598

5990-6000° +599

6000-6010° +600

6010-6020° +601

6020-6030° +602

6030-6040° +603

6040-6050° +604

6050-6060° +605

6060-6070° +606

6070-6080° +607

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6090-6100° +609

6100-6110° +610

6110-6120° +611

6120-6130° +612

6130-6140° +613

6140-6150° +614

6150-6160° +615

6160-6170° +616

6170-6180° +617

6180-6190° +618

6190-6200° +619

6200-6210° +620

6210-6220° +621

6220-6230° +622

6230-6240° +623

6240-6250° +624

6250-6260° +625

6260-6270° +626

Lampiran 23. Worksheet REBA Awal Pekerja 3 bagian Kanan

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Date: _____

Task Name: *Sudut Kanan Awal*

by: *Adi Pratiyo*

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

Neck Score +3

Step 2: Locate Trunk Position

Trunk Score +4

Step 3: Legs

Leg Score +1

Step 4: Look-up Posture Score in Table A
 Using values from steps 1-3 above. Locate score in Table A.

Score A	Score B	Score C	Score D	Score E	Score F	Score G	Score H	Score I	Score J	Score K	Score L	Score M	Score N	Score O	Score P	Score Q	Score R	Score S	Score T	Score U	Score V	Score W	Score X	Score Y	Score Z
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	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	12	12	12	12	

Step 5: Add Force/Load Score
 If load < 11 lbs.: +0
 If load 11 to 22 lbs.: +1
 If load > 22 lbs.: +2
Force/Load Score +1

Step 6: Score A, Find Row in Table C
 Add values from steps 4 & 5 to obtain Score A. Find row in Table C.

Score A	Score B	Score C	Score D	Score E	Score F	Score G	Score H	Score I	Score J	Score K	Score L	Score M	Score N	Score O	Score P	Score Q	Score R	Score S	Score T	Score U	Score V	Score W	Score X	Score Y	Score Z
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	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	12	12	12	12	

Scoring
 1 = Negligible Risk
 2-3 = Low Risk
 4-7 = Medium Risk
 8-10 = High Risk
 11+ = Very High Risk

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position: A

Upper Arm Score +3

Step 8: Locate Lower Arm Position:

Lower Arm Score +2

Step 9: Locate Wrist Position:

Wrist Score +3

Step 10: Look-up Posture Score in Table B
 Using values from steps 7-9 above. Locate score in Table B.

Score A	Score B	Score C	Score D	Score E	Score F	Score G	Score H	Score I	Score J	Score K	Score L	Score M	Score N	Score O	Score P	Score Q	Score R	Score S	Score T	Score U	Score V	Score W	Score X	Score Y	Score Z
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	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	12	12	12	12	

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

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.

Score A	Score B	Score C	Score D	Score E	Score F	Score G	Score H	Score I	Score J	Score K	Score L	Score M	Score N	Score O	Score P	Score Q	Score R	Score S	Score T	Score U	Score V	Score W	Score X	Score Y	Score Z
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	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	12	12	12	12	

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

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Task Name: *Bobot Kiri*
by: *Adi Priantika*

Date: _____

Upper Arm Score **19**

Lower Arm Score **12**

Wrist Score **13**

Posture Score B **7**

Coupling Score **0**

Score B **7**

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position
10-20° in extension
+1

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

Step 2: Locate Trunk Position
0-20° in extension
+1

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

Step 3: Legs
Adjust: 30-50°
+1

Step 4: Look-up Posture Score in Table A
Using values from steps 1-3 above, Locate score in Table 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 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.

Scoring
1 = Negligible Risk
2 = Low Risk
3 = Moderate Risk
4 = High Risk
5 = Very High Risk

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:
in extension
+1

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

Step 8: Locate Lower Arm Position:
+1

Step 9: Locate Wrist Position:
+1

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.

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

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.

Step 13: Activity Score
+1 1 or more body parts are held for longer than 1 minute (static)
+2 repeated small range actions (more than 4x per minute)
+3 Action causes rapid large range changes in postures or unstable base

Table A

	Neck				
	1	2	3	4	5
Legs	1	2	3	4	5
Trunk	1	2	3	4	5
Posture	1	2	3	4	5
Score	1	2	3	4	5

Table B

	Lower Arm				
	1	2	3	4	5
Wrist	1	2	3	4	5
Upper Arm	1	2	3	4	5
Posture	1	2	3	4	5
Score	1	2	3	4	5

Table C

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

Table C Score

Score A	Score B	Activity Score	REBA Score
1	1	1	9

Lampiran 27. Worksheet REBA Sekarang Pekerja 1 bagian Kanan

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Table Name: *Saminio Kanan*
by: *Adi Priatno*
Date:

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position
10-20°
+1
Neck Score
+2

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

Step 2: Locate Trunk Position
0-20°
+1
Trunk Score
+2

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

Step 3: Legs
Adjust: 30-60°
+1
Leg Score
+2

Step 4: Look-up Posture Score in Table A
Using values from steps 1-3 above.
Locate score in Table 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
Force/Load Score
+1

Step 6: Score A, Find Row in Table C
Add values from steps 4 & 5 to obtain Score A.
Find Row in Table C

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

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:
+1
+2
+3
+4
Upper Arm Score
+2

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

Step 8: Locate Lower Arm Position:
+1
+2
Lower Arm Score
+1

Step 9: Locate Wrist Position:
+1
+2
Wrist Score
+3

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

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

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.

Step 13: Activity Score
+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

Scores

Table A

	1	2	3
Legs	1	2	3
Trunk	1	2	3
Neck	1	2	3
Posture	1	2	3
Score	1	2	3

Table B

	1	2	3
Upper Arm	1	2	3
Lower Arm	1	2	3
Wrist	1	2	3
Posture	1	2	3
Score	1	2	3

Table C

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

Table C Score

Score A: 1 + Activity Score: 1 = REBA Score: 2

Lampiran 29. Worksheet REBA Sekarang Pekerja 2 bagian Kanan

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Date: _____

Task Name: *Puji Kanan*

by: *Adi Pranto*

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position

 Neck Score: **+2**

Step 2: Locate Trunk Position

 Trunk Score: **+2**

Step 3: Legs

 Leg Score: **+1**

Step 4: Look-up Posture Score in Table A
 Using values from steps 1-3 above, locate score in Table A.
 Locate score in Table A: **3**

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
 Force / Load Score: **0**

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**

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:

 Upper Arm Score: **+2**

Step 8: Locate Lower Arm Position:

 Lower Arm Score: **+2**

Step 9: Locate Wrist Position:

 Wrist Score: **+3**

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.
 Posture Score B: **4**

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

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.
 Table C Score: **4**

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

	1	2	3
Legs	1	2	3
Trunk	1	2	3
Neck	1	2	3
Score	1	2	3

	1	2	3	4
Upper Arm	1	2	3	4
Lower Arm	1	2	3	4
Wrist	1	2	3	4
Score	1	2	3	4

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

Scoring

1 = Negligible Risk
 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

Original Worksheet Developed by Dr. Alan Hedge Based on Technical note: Rapid Entire Body Assessment (REBA), Hignett, McAtamney, Applied Ergonomics 31 (2000) 301-305

ERGONOMICS PLUS

REBA Employee Assessment Worksheet

Task Name: Rup. kin. Sekarang
by: Adi Pronty

Date: _____

A. Neck, Trunk and Leg Analysis

Step 1: Locate Neck Position
10-20° +1
Neck Score +2

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

Step 2: Locate Trunk Position
0-20° +1
Trunk Score +2

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

Step 3: Legs
Adjust: 30-60° +1
Leg Score +1

Step 4: Look-up Posture Score in Table A
Using values from steps 1-3 above, Locate score in Table 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

Step 6: Score A, Find Row in Table C
Add values from steps 4 & 5 to obtain Score A. Find Row in Table C.

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

B. Arm and Wrist Analysis

Step 7: Locate Upper Arm Position:
20° +2
Upper Arm Score +2

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

Step 8: Locate Lower Arm Position:
65° +2
Lower Arm Score +1

Step 9: Locate Wrist Position:
15° +1
Wrist Score +3

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

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

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.

Step 13: Activity Score
+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

	Neck		
	1	2	3
Legs	1	2	3
Trunk	1	2	3
Posture	1	2	3
Score	1	2	3

	Lower Arm		
	1	2	3
Wrist	1	2	3
Upper Arm	1	2	3
Score	1	2	3

	Score B											
	1	2	3	4	5	6	7	8	9	10	11	12
Score A	1	1	1	2	2	2	3	3	3	4	4	4
	2	2	2	3	3	3	4	4	4	5	5	5
	3	3	3	4	4	4	5	5	5	6	6	6
	4	4	4	5	5	5	6	6	6	7	7	7
	5	5	5	6	6	6	7	7	7	8	8	8
	6	6	6	7	7	7	8	8	8	9	9	9
	7	7	7	8	8	8	9	9	9	10	10	10
	8	8	8	9	9	9	10	10	10	11	11	11
	9	9	9	10	10	10	11	11	11	12	12	12
	10	10	10	11	11	11	12	12	12	13	13	13
	11	11	11	12	12	12	13	13	13	14	14	14
	12	12	12	13	13	13	14	14	14	15	15	15

Score A: 3

Posture Score A: 3

Force/Load Score: 0

Score A: 3

Activity Score: 1

REBA Score: 4

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position
 -20° to 20° = 0
 20° to 45° = +1
 45° to 60° = +2
 60° to 75° = +3
 75° to 90° = +4
 If shoulder is raised +1
 If arm is supported or propped +1
 Final Upper Arm Score = **+4**

Step 2: Locate Lower Arm Position
 0° to 100° = 0
 100° to 120° = +1
 120° to 140° = +2
 140° to 160° = +3
 160° to 180° = +4
 If arm is working across midline of the body +1
 If arm out to side of body +1
 Final Lower Arm Score = **3**

Step 3: Locate Wrist Position
 -10° to 10° = 0
 10° to 30° = +1
 30° to 60° = +2
 60° to 90° = +3
 90° to 120° = +4
 If wrist is bent from the midline +1
 Final Wrist Score = **4**

Step 4: Wrist Twist
 If wrist is twisted mainly in mid-range = 1
 If twist at or near end of twisting range = 2
 Final Wrist Twist Score = **1**

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A
 Final Posture Score = **6**

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or if action repeatedly occurs 4 times per minute or more +1
 Final Muscle Use Score = **1**

Step 7: Add Force/load Score
 If load less than 2 kg (intermittent) = 0
 If 2 kg to 10 kg (static or repeated) = +1
 If 10 kg to 15 kg (static or repeated) = +2
 If more than 15 kg (static or repeated) or shock = +3
 Final Force/load Score = **0**

Step 8: Find Row in Table C
 The completed score from the Arm/Wrist analysis is used to find the row on Table C
 Final Arm/Wrist Score = **7**

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position
 0° to 10° = 0
 10° to 30° = +1
 30° to 45° = +2
 45° to 60° = +3
 60° to 75° = +4
 75° to 90° = +5
 If neck is twisted +1
 If neck is sub-optimal +1
 Final Neck Score = **4**

Step 10: Locate Trunk Position
 0° to 30° = 0
 30° to 45° = +1
 45° to 60° = +2
 60° to 75° = +3
 75° to 90° = +4
 90° to 105° = +5
 105° to 120° = +6
 If trunk is twisted +1
 If trunk is sub-optimal +1
 Final Trunk Score = **1**

Step 11: Legs
 If legs & feet supported and balanced = 0
 If not = +1
 Final Legs Score = **1**

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10 & 11 to locate Posture Score in Table B
 Final Posture Score = **7**

Step 13: Add Muscle Use Score
 If posture mainly static or if action repeatedly occurs 4 times per minute or more +1
 Final Muscle Use Score = **1**

Step 14: Add Force/load Score
 If load less than 2 kg (intermittent) = 0
 If 2 kg to 10 kg (static or repeated) = +1
 If 10 kg to 15 kg (static or repeated) = +2
 If more than 15 kg (static or repeated) or shock = +3
 Final Force/load Score = **0**

Step 15: Find Column in Table C
 The completed score from the Neck/Trunk & Leg analysis is used to find the column on Table C
 Final Neck, Trunk & Leg Score = **8**

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Wrist Twist
0	0	0	0
0	0	0	1
0	0	0	2
0	0	0	3
0	0	0	4
0	0	1	0
0	0	1	1
0	0	1	2
0	0	1	3
0	0	1	4
0	0	2	0
0	0	2	1
0	0	2	2
0	0	2	3
0	0	2	4
0	0	3	0
0	0	3	1
0	0	3	2
0	0	3	3
0	0	3	4
0	0	4	0
0	0	4	1
0	0	4	2
0	0	4	3
0	0	4	4
0	1	0	0
0	1	0	1
0	1	0	2
0	1	0	3
0	1	0	4
0	1	1	0
0	1	1	1
0	1	1	2
0	1	1	3
0	1	1	4
0	1	2	0
0	1	2	1
0	1	2	2
0	1	2	3
0	1	2	4
0	1	3	0
0	1	3	1
0	1	3	2
0	1	3	3
0	1	3	4
0	1	4	0
0	1	4	1
0	1	4	2
0	1	4	3
0	1	4	4
0	2	0	0
0	2	0	1
0	2	0	2
0	2	0	3
0	2	0	4
0	2	1	0
0	2	1	1
0	2	1	2
0	2	1	3
0	2	1	4
0	2	2	0
0	2	2	1
0	2	2	2
0	2	2	3
0	2	2	4
0	2	3	0
0	2	3	1
0	2	3	2
0	2	3	3
0	2	3	4
0	2	4	0
0	2	4	1
0	2	4	2
0	2	4	3
0	2	4	4
0	3	0	0
0	3	0	1
0	3	0	2
0	3	0	3
0	3	0	4
0	3	1	0
0	3	1	1
0	3	1	2
0	3	1	3
0	3	1	4
0	3	2	0
0	3	2	1
0	3	2	2
0	3	2	3
0	3	2	4
0	3	3	0
0	3	3	1
0	3	3	2
0	3	3	3
0	3	3	4
0	3	4	0
0	3	4	1
0	3	4	2
0	3	4	3
0	3	4	4
0	4	0	0
0	4	0	1
0	4	0	2
0	4	0	3
0	4	0	4
0	4	1	0
0	4	1	1
0	4	1	2
0	4	1	3
0	4	1	4
0	4	2	0
0	4	2	1
0	4	2	2
0	4	2	3
0	4	2	4
0	4	3	0
0	4	3	1
0	4	3	2
0	4	3	3
0	4	3	4
0	4	4	0
0	4	4	1
0	4	4	2
0	4	4	3
0	4	4	4
1	0	0	0
1	0	0	1
1	0	0	2
1	0	0	3
1	0	0	4
1	0	1	0
1	0	1	1
1	0	1	2
1	0	1	3
1	0	1	4
1	0	2	0
1	0	2	1
1	0	2	2
1	0	2	3
1	0	2	4
1	0	3	0
1	0	3	1
1	0	3	2
1	0	3	3
1	0	3	4
1	0	4	0
1	0	4	1
1	0	4	2
1	0	4	3
1	0	4	4
1	1	0	0
1	1	0	1
1	1	0	2
1	1	0	3
1	1	0	4
1	1	1	0
1	1	1	1
1	1	1	2
1	1	1	3
1	1	1	4
1	1	2	0
1	1	2	1
1	1	2	2
1	1	2	3
1	1	2	4
1	1	3	0
1	1	3	1
1	1	3	2
1	1	3	3
1	1	3	4
1	1	4	0
1	1	4	1
1	1	4	2
1	1	4	3
1	1	4	4
1	2	0	0
1	2	0	1
1	2	0	2
1	2	0	3
1	2	0	4
1	2	1	0
1	2	1	1
1	2	1	2
1	2	1	3
1	2	1	4
1	2	2	0
1	2	2	1
1	2	2	2
1	2	2	3
1	2	2	4
1	2	3	0
1	2	3	1
1	2	3	2
1	2	3	3
1	2	3	4
1	2	4	0
1	2	4	1
1	2	4	2
1	2	4	3
1	2	4	4
1	3	0	0
1	3	0	1
1	3	0	2
1	3	0	3
1	3	0	4
1	3	1	0
1	3	1	1
1	3	1	2
1	3	1	3
1	3	1	4
1	3	2	0
1	3	2	1
1	3	2	2
1	3	2	3
1	3	2	4
1	3	3	0
1	3	3	1
1	3	3	2
1	3	3	3
1	3	3	4
1	3	4	0
1	3	4	1
1	3	4	2
1	3	4	3
1	3	4	4
1	4	0	0
1	4	0	1
1	4	0	2
1	4	0	3
1	4	0	4
1	4	1	0
1	4	1	1
1	4	1	2
1	4	1	3
1	4	1	4
1	4	2	0
1	4	2	1
1	4	2	2
1	4	2	3
1	4	2	4
1	4	3	0
1	4	3	1
1	4	3	2
1	4	3	3
1	4	3	4
1	4	4	0
1	4	4	1
1	4	4	2
1	4	4	3
1	4	4	4
2	0	0	0
2	0	0	1
2	0	0	2
2	0	0	3
2	0	0	4
2	0	1	0
2	0	1	1
2	0	1	2
2	0	1	3
2	0	1	4
2	0	2	0
2	0	2	1
2	0	2	2
2	0	2	3
2	0	2	4
2	0	3	0
2	0	3	1
2	0	3	2
2	0	3	3
2	0	3	4
2	0	4	0
2	0	4	1
2	0	4	2
2	0	4	3
2	0	4	4
2	1	0	0
2	1	0	1
2	1	0	2
2	1	0	3
2	1	0	4
2	1	1	0
2	1	1	1
2	1	1	2
2	1	1	3
2	1	1	4
2	1	2	0
2	1	2	1
2	1	2	2
2	1	2	3
2	1	2	4
2	1	3	0
2	1	3	1
2	1	3	2
2	1	3	3
2	1	3	4
2	1	4	0
2	1	4	1
2	1	4	2
2	1	4	3
2	1	4	4
2	2	0	0
2	2	0	1
2	2	0	2
2	2	0	3
2	2	0	4

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position
Step 1a: Adjust
 If shoulder is raised: +1
 If upper arm is abducted: +1
 If arm is supported or padded: -1

Step 2: Locate Lower Arm Position
Step 2a: Adjust
 If arm is moving across midline of the body: +1
 If arm is out to side of body: +1

Step 3: Locate Wrist Position
Step 3a: Adjust
 If wrist is bent from the midline: +1
Step 4: Wrist Twist
 If wrist is twisted: +1
 If twist is at or near end of twisting range: +2

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A.

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute):
 If action repeatedly occurs 4 times per minute or more: +1
Step 7: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 2 kg to 10 kg (static or repeated): +2
 If more than 10 kg (load or repeated or static): +3

Step 8: Find Row in Table C
 The completed score from the Arm/Wrist analysis is used to find the row on Table C.

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position
Step 9a: Adjust
 If neck is twisted: +1
 If neck is side-bending: +1

Step 10: Locate Trunk Position
Step 10a: Adjust
 If trunk is twisted: +1
 If trunk is side-bending: +1

Step 11: Legs
 If legs 3 feet supported and balanced: +1
 If not: +2

Step 11a: Adjust
 If legs 3 feet supported and balanced: +1
 If not: +2

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10, 11 & 11a to locate Posture Score in Table B.

Step 13: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute):
 If action repeatedly occurs 4 times per minute or more: +1
Step 14: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 2 kg to 10 kg (static or repeated): +2
 If more than 10 kg (load or repeated or static): +3

Step 15: Find Column in Table C
 The completed score from the Neck/Trunk & Leg analysis is used to find the column on Table C.

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Posture Score
1	1	1	1
1	1	2	2
1	1	3	3
1	2	1	2
1	2	2	3
1	2	3	4
1	3	1	3
1	3	2	4
1	3	3	5
2	1	1	2
2	1	2	3
2	1	3	4
2	2	1	3
2	2	2	4
2	2	3	5
2	3	1	4
2	3	2	5
2	3	3	6
3	1	1	3
3	1	2	4
3	1	3	5
3	2	1	4
3	2	2	5
3	2	3	6
3	3	1	5
3	3	2	6
3	3	3	7

Table B

Neck	Trunk	Legs	Posture Score
1	1	1	1
1	1	2	2
1	1	3	3
1	2	1	2
1	2	2	3
1	2	3	4
1	3	1	3
1	3	2	4
1	3	3	5
2	1	1	2
2	1	2	3
2	1	3	4
2	2	1	3
2	2	2	4
2	2	3	5
2	3	1	4
2	3	2	5
2	3	3	6
3	1	1	3
3	1	2	4
3	1	3	5
3	2	1	4
3	2	2	5
3	2	3	6
3	3	1	5
3	3	2	6
3	3	3	7

Table C

Posture Score	Muscle Use Score	Force/load Score	Final Score
1	0	0	1
1	1	0	2
1	2	0	3
1	3	0	4
2	0	0	2
2	1	0	3
2	2	0	4
2	3	0	5
3	0	0	3
3	1	0	4
3	2	0	5
3	3	0	6
4	0	0	4
4	1	0	5
4	2	0	6
4	3	0	7
5	0	0	5
5	1	0	6
5	2	0	7
5	3	0	8
6	0	0	6
6	1	0	7
6	2	0	8
6	3	0	9
7	0	0	7
7	1	0	8
7	2	0	9
7	3	0	10

Final Score = 7

Subject: Sonno D. bado - kiri (AyuN) **Date:** 2/07/2015
Company: Java Air Stone **Department:** Penjualan **Scorer:** Adi

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately

Source: McAtamney, J. & Corlett, E.N. (1993) RULA: a survey method for the investigation of work-related upper limb disorders, *Applied Ergonomics*, 24(2) 91-99.
 © Professor Alan Hedge, Cornell University, Feb. 2001

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

 Final Upper Arm Score = **4**

Step 2: Locate Lower Arm Position

 Final Lower Arm Score = **2**

Step 3: Locate Wrist Position

 Final Wrist Score = **4**

Step 4: Wrist Twist

 Final Wrist Twist Score = **1**

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A.
 Posture Score = **5**

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or if action repeatedly occurs 4 times per minute or more: +1
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 15 kg (intermittent): +2
 If more than 15 kg (load or repeated or shocks): +3
 Muscle Use Score = **1**

Step 7: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 15 kg (intermittent): +2
 If more than 15 kg (load or repeated or shocks): +3
 Force/load Score = **0**

Step 8: Find Row in Table C
 The combined score from the Posture, Muscle Use & Force/load analysis is used to find the row on Table C.
 Final Wrist & Arm Score = **6**

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

 Final Neck Score = **1**

Step 10: Locate Trunk Position

 Final Trunk Score = **1**

Step 11: Legs

 Final Leg Score = **1**

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10 & 11 to locate Posture Score in Table B.
 Posture Score = **7**

Step 13: Add Muscle Use Score
 If posture mainly static or if action repeatedly occurs 4 times per minute or more: +1
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 15 kg (intermittent): +2
 If more than 15 kg (load or repeated or shocks): +3
 Muscle Use Score = **1**

Step 14: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 15 kg (intermittent): +2
 If more than 15 kg (load or repeated or shocks): +3
 Force/load Score = **0**

Step 15: Find Column in Table C
 The combined score from the Neck, Trunk & Leg analysis is used to find the column on Table C.
 Final Neck, Trunk & Leg Score = **8**

Final Score = 7

Subject: RUCI bagas kanaan (AWAL)

Company: Java AH Stone

Date: 2.04.2015

Department: Remedializin

Scorer: Adi

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 = Investigate further; 5 or 6 = Investigate further and change soon; 7 = Investigate and change immediately

Source: McAtamney, L. & Corlett, E.N. (1993) RULA: a survey method for the investigation of work-related upper limb disorders. *Applied Ergonomics*, 24(2), 91-99

© Professor Alan Hedge, Cornell University, Feb. 2001

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position
 0° to 30° = 1
 30° to 60° = 2
 60° to 90° = 3
 90° to 120° = 4
 120° to 150° = 5
 150° to 180° = 6

Step 2: Locate Lower Arm Position
 0° to 30° = 1
 30° to 60° = 2
 60° to 90° = 3
 90° to 120° = 4
 120° to 150° = 5
 150° to 180° = 6

Step 3: Locate Wrist Position
 0° to 15° = 1
 15° to 30° = 2
 30° to 45° = 3
 45° to 60° = 4
 60° to 75° = 5
 75° to 90° = 6

Step 4: Wrist Twist
 If wrist is twisted more than 45° = 1
 If wrist is twisted 45° or less = 2

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A.

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or action repeatedly occurs 4 times per minute or more = 1
 If posture mainly static or action repeatedly occurs 4 times per minute or more = 1
 If posture mainly static or action repeatedly occurs 4 times per minute or more = 1

Step 7: Add Force/load Score
 If load less than 2 kg intermittent = 0
 If load less than 2 kg continuous = 1
 If load 2 to 5 kg intermittent = 2
 If load 2 to 5 kg continuous = 3
 If load more than 5 kg intermittent = 4
 If load more than 5 kg continuous = 5

Step 8: Find Row in Table C
 The row identified by the scores from steps 5, 6 & 7 is used to find the column of Chart C.

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position
 0° to 10° = 1
 10° to 20° = 2
 20° to 30° = 3
 30° to 40° = 4
 40° to 50° = 5
 50° to 60° = 6

Step 10: Locate Trunk Position
 0° to 10° = 1
 10° to 20° = 2
 20° to 30° = 3
 30° to 40° = 4
 40° to 50° = 5
 50° to 60° = 6

Step 11: Legs
 If legs & feet supported and balanced = 1
 If not = 2

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10 & 11 to locate Posture Score in Table B.

Step 13: Add Muscle Use Score
 If posture mainly static or action repeatedly occurs 4 times per minute or more = 1
 If posture mainly static or action repeatedly occurs 4 times per minute or more = 1

Step 14: Add Force/load Score
 If load less than 2 kg intermittent = 0
 If load less than 2 kg continuous = 1
 If load 2 to 5 kg intermittent = 2
 If load 2 to 5 kg continuous = 3
 If load more than 5 kg intermittent = 4
 If load more than 5 kg continuous = 5

Step 15: Find Column in Table C
 The column identified by the scores from steps 12, 13 & 14 is used to find the row of Chart C.

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Twist
1	1	1	1
1	1	2	1
1	1	3	1
1	1	4	1
1	1	5	1
1	1	6	1
1	2	1	1
1	2	2	1
1	2	3	1
1	2	4	1
1	2	5	1
1	2	6	1
1	3	1	1
1	3	2	1
1	3	3	1
1	3	4	1
1	3	5	1
1	3	6	1
1	4	1	1
1	4	2	1
1	4	3	1
1	4	4	1
1	4	5	1
1	4	6	1
1	5	1	1
1	5	2	1
1	5	3	1
1	5	4	1
1	5	5	1
1	5	6	1
1	6	1	1
1	6	2	1
1	6	3	1
1	6	4	1
1	6	5	1
1	6	6	1
2	1	1	2
2	1	2	2
2	1	3	2
2	1	4	2
2	1	5	2
2	1	6	2
2	2	1	2
2	2	2	2
2	2	3	2
2	2	4	2
2	2	5	2
2	2	6	2
2	3	1	2
2	3	2	2
2	3	3	2
2	3	4	2
2	3	5	2
2	3	6	2
2	4	1	2
2	4	2	2
2	4	3	2
2	4	4	2
2	4	5	2
2	4	6	2
2	5	1	2
2	5	2	2
2	5	3	2
2	5	4	2
2	5	5	2
2	5	6	2
2	6	1	2
2	6	2	2
2	6	3	2
2	6	4	2
2	6	5	2
2	6	6	2
3	1	1	3
3	1	2	3
3	1	3	3
3	1	4	3
3	1	5	3
3	1	6	3
3	2	1	3
3	2	2	3
3	2	3	3
3	2	4	3
3	2	5	3
3	2	6	3
3	3	1	3
3	3	2	3
3	3	3	3
3	3	4	3
3	3	5	3
3	3	6	3
3	4	1	3
3	4	2	3
3	4	3	3
3	4	4	3
3	4	5	3
3	4	6	3
3	5	1	3
3	5	2	3
3	5	3	3
3	5	4	3
3	5	5	3
3	5	6	3
3	6	1	3
3	6	2	3
3	6	3	3
3	6	4	3
3	6	5	3
3	6	6	3
4	1	1	4
4	1	2	4
4	1	3	4
4	1	4	4
4	1	5	4
4	1	6	4
4	2	1	4
4	2	2	4
4	2	3	4
4	2	4	4
4	2	5	4
4	2	6	4
4	3	1	4
4	3	2	4
4	3	3	4
4	3	4	4
4	3	5	4
4	3	6	4
4	4	1	4
4	4	2	4
4	4	3	4
4	4	4	4
4	4	5	4
4	4	6	4
4	5	1	4
4	5	2	4
4	5	3	4
4	5	4	4
4	5	5	4
4	5	6	4
4	6	1	4
4	6	2	4
4	6	3	4
4	6	4	4
4	6	5	4
4	6	6	4
5	1	1	5
5	1	2	5
5	1	3	5
5	1	4	5
5	1	5	5
5	1	6	5
5	2	1	5
5	2	2	5
5	2	3	5
5	2	4	5
5	2	5	5
5	2	6	5
5	3	1	5
5	3	2	5
5	3	3	5
5	3	4	5
5	3	5	5
5	3	6	5
5	4	1	5
5	4	2	5
5	4	3	5
5	4	4	5
5	4	5	5
5	4	6	5
5	5	1	5
5	5	2	5
5	5	3	5
5	5	4	5
5	5	5	5
5	5	6	5
5	6	1	5
5	6	2	5
5	6	3	5
5	6	4	5
5	6	5	5
5	6	6	5
6	1	1	6
6	1	2	6
6	1	3	6
6	1	4	6
6	1	5	6
6	1	6	6
6	2	1	6
6	2	2	6
6	2	3	6
6	2	4	6
6	2	5	6
6	2	6	6
6	3	1	6
6	3	2	6
6	3	3	6
6	3	4	6
6	3	5	6
6	3	6	6
6	4	1	6
6	4	2	6
6	4	3	6
6	4	4	6
6	4	5	6
6	4	6	6
6	5	1	6
6	5	2	6
6	5	3	6
6	5	4	6
6	5	5	6
6	5	6	6
6	6	1	6
6	6	2	6
6	6	3	6
6	6	4	6
6	6	5	6
6	6	6	6

Table B

Neck	Trunk	Legs
1	1	1
1	1	2
1	1	3
1	1	4
1	1	5
1	1	6
1	2	1
1	2	2
1	2	3
1	2	4
1	2	5
1	2	6
1	3	1
1	3	2
1	3	3
1	3	4
1	3	5
1	3	6
1	4	1
1	4	2
1	4	3
1	4	4
1	4	5
1	4	6
1	5	1
1	5	2
1	5	3
1	5	4
1	5	5
1	5	6
1	6	1
1	6	2
1	6	3
1	6	4
1	6	5
1	6	6
2	1	1
2	1	2
2	1	3
2	1	4
2	1	5
2	1	6
2	2	1
2	2	2
2	2	3
2	2	4
2	2	5
2	2	6
2	3	1
2	3	2
2	3	3
2	3	4
2	3	5
2	3	6
2	4	1
2	4	2
2	4	3
2	4	4
2	4	5
2	4	6
2	5	1
2	5	2
2	5	3
2	5	4
2	5	5
2	5	6
2	6	1
2	6	2
2	6	3
2	6	4
2	6	5
2	6	6
3	1	1
3	1	2
3	1	3
3	1	4
3	1	5
3	1	6
3	2	1
3	2	2
3	2	3
3	2	4
3	2	5
3	2	6
3	3	1
3	3	2
3	3	3
3	3	4
3	3	5
3	3	6
3	4	1
3	4	2
3	4	3
3	4	4
3	4	5
3	4	6
3	5	1
3	5	2
3	5	3
3	5	4
3	5	5
3	5	6
3	6	1
3	6	2
3	6	3
3	6	4
3	6	5
3	6	6
4	1	1
4	1	2
4	1	3
4	1	4
4	1	5
4	1	6
4	2	1
4	2	2
4	2	3
4	2	4
4	2	5
4	2	6
4	3	1
4	3	2
4	3	3
4	3	4
4	3	5
4	3	6
4	4	1
4	4	2
4	4	3
4	4	4
4	4	5
4	4	6
4	5	1
4	5	2
4	5	3
4	5	4
4	5	5
4	5	6
4	6	1
4	6	2
4	6	3
4	6	4
4	6	5
4	6	6
5	1	1
5	1	2
5	1	3
5	1	4
5	1	5
5	1	6
5	2	1
5	2	2
5	2	3
5	2	4
5	2	5
5	2	6
5	3	1
5	3	2
5	3	3
5	3	4
5	3	5
5	3	6
5	4	1
5	4	2
5	4	3
5	4	4
5	4	5
5	4	6
5	5	1
5	5	2
5	5	3
5	5	4
5	5	5
5	5	6
5	6	1
5	6	2
5	6	3
5	6	4
5	6	5
5	6	6
6	1	1
6	1	2
6	1	3
6	1	4
6	1	5
6	1	6
6	2	1
6	2	2
6	2	3
6	2	4
6	2	5
6	2	6
6	3	1
6	3	2
6	3	3
6	3	4
6	3	

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position



Step 1a: Adjust...

Step 2: Locate Lower Arm Position



Step 2a: Adjust...

Step 3: Locate Wrist Position



Step 3a: Adjust...

Step 4: Wrist Twist

Step 5: Look-up Posture Score in Table A

Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A

Step 6: Add Muscle Use Score

Step 7: Add Forceful Score

Step 8: Find Row in Table C

The combined score from the Arm/Wrist analysis is used to find the row on Table C

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position



Step 9a: Adjust...

Step 10: Locate Trunk Position



Step 10a: Adjust...

Step 11: Legs



Step 11a: Adjust...

Step 12: Look-up Posture Score in Table B

Use values from steps 9, 10 & 11 to locate Posture Score in Table B

Step 13: Add Muscle Use Score

Step 14: Add Forceful Score

Step 15: Find Column in Table C

The combined score from the Neck/Trunk/Leg analysis is used to find the column on Table C

C. Final Score

Final Score = 7

Posture Score	Muscle Use Score	Forceful Score	Final Score
1	1	1	3
2	1	1	4
3	1	1	5
4	1	1	6
5	1	1	7
6	1	1	8
7	1	1	9
8	1	1	10
9	1	1	11
10	1	1	12

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

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Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

Final Score = 7

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately

Source: MacKenzie, J. & Corlett, E.N. (1993) RULA: a survey method for the investigation of work-related upper limb disorders, *Applied Ergonomics*, 24(2) 91-99.

© Professor Alan Hedge, Cornell University, Feb. 2001

Subject: Suciadi, Ang, Kenton, (Ang)

Company: Nava Art Stone

Department: Penjualan

Scorer: Adi

Date: 2/10/2015

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position
 0° to 30° = 0
 30° to 45° = 1
 45° to 90° = 2
 If shoulder is raised +1
 If arm is supported or posture is leaning -1

Step 2: Locate Lower Arm Position
 0° to 30° = 0
 30° to 45° = 1
 45° to 90° = 2
 If arm is supported or posture is leaning -1
 If arm out to side of body +1

Step 3: Locate Wrist Position
 0° to 15° = 0
 15° to 30° = 1
 30° to 45° = 2
 45° to 60° = 3
 60° to 75° = 4
 75° to 90° = 5
 If wrist is bent from the midline +1
 If wrist is twisted mainly in mid-range +2
 If twist at or near end of twisting range +2

Step 4: Wrist Twist
 0° to 15° = 0
 15° to 30° = 1
 30° to 45° = 2
 45° to 60° = 3
 60° to 75° = 4
 75° to 90° = 5

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A

Step 6: Add Muscle Use Score
 If posture: nearly static (i.e. held for longer than 1 minute) or action repeatedly occurs 4 times per minute or more +1
 If load: more than 2 kg intermittent +2
 If load: more than 10 kg static or repeated or shock +3
 If load: more than 10 kg load or repeated or shock +3

Step 7: Add Force/load Score
 If load: more than 2 kg intermittent +2
 If load: more than 10 kg static or repeated or shock +3
 If load: more than 10 kg load or repeated or shock +3

Step 8: Find Row in Table C
 The completed score from the Arm/Wrist analysis is used to find the row on Table C

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position
 0° to 10° = 0
 10° to 20° = 1
 20° to 30° = 2
 30° to 40° = 3
 40° to 50° = 4
 50° to 60° = 5
 60° to 70° = 6
 70° to 80° = 7
 80° to 90° = 8
 90° to 100° = 9
 If neck is twisted +1
 If neck is side-bending +1

Step 10: Locate Trunk Position
 0° to 10° = 0
 10° to 20° = 1
 20° to 30° = 2
 30° to 40° = 3
 40° to 50° = 4
 50° to 60° = 5
 60° to 70° = 6
 70° to 80° = 7
 80° to 90° = 8
 90° to 100° = 9
 If trunk is twisted +1
 If trunk is side-bending +1

Step 11: Legs
 If legs & feet supported and balanced +1
 If not +2

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10 & 11 to locate Posture Score in Table B

Step 13: Add Muscle Use Score
 If posture: nearly static (i.e. held for longer than 1 minute) or action repeatedly occurs 4 times per minute or more +1
 If load: more than 2 kg intermittent +2
 If load: more than 10 kg static or repeated or shock +3
 If load: more than 10 kg load or repeated or shock +3

Step 14: Add Force/load Score
 If load: more than 2 kg intermittent +2
 If load: more than 10 kg static or repeated or shock +3
 If load: more than 10 kg load or repeated or shock +3

Step 15: Find Column in Table C
 The completed score from the Neck/Trunk & Leg analysis is used to find the column on Table C

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Wrist Twist
0	0	0	0
0	0	1	1
0	0	2	2
0	0	3	3
0	0	4	4
0	0	5	5
0	1	0	1
0	1	1	2
0	1	2	3
0	1	3	4
0	1	4	5
0	1	5	6
0	2	0	2
0	2	1	3
0	2	2	4
0	2	3	5
0	2	4	6
0	2	5	7
1	0	0	1
1	0	1	2
1	0	2	3
1	0	3	4
1	0	4	5
1	0	5	6
1	1	0	2
1	1	1	3
1	1	2	4
1	1	3	5
1	1	4	6
1	1	5	7
1	2	0	3
1	2	1	4
1	2	2	5
1	2	3	6
1	2	4	7
1	2	5	8
2	0	0	2
2	0	1	3
2	0	2	4
2	0	3	5
2	0	4	6
2	0	5	7
2	1	0	3
2	1	1	4
2	1	2	5
2	1	3	6
2	1	4	7
2	1	5	8
2	2	0	4
2	2	1	5
2	2	2	6
2	2	3	7
2	2	4	8
2	2	5	9

Table B

Neck	Trunk	Legs	Posture
0	0	0	0
0	0	1	1
0	0	2	2
0	0	3	3
0	0	4	4
0	0	5	5
0	1	0	1
0	1	1	2
0	1	2	3
0	1	3	4
0	1	4	5
0	1	5	6
0	2	0	2
0	2	1	3
0	2	2	4
0	2	3	5
0	2	4	6
0	2	5	7
1	0	0	1
1	0	1	2
1	0	2	3
1	0	3	4
1	0	4	5
1	0	5	6
1	1	0	2
1	1	1	3
1	1	2	4
1	1	3	5
1	1	4	6
1	1	5	7
1	2	0	3
1	2	1	4
1	2	2	5
1	2	3	6
1	2	4	7
1	2	5	8
2	0	0	2
2	0	1	3
2	0	2	4
2	0	3	5
2	0	4	6
2	0	5	7
2	1	0	3
2	1	1	4
2	1	2	5
2	1	3	6
2	1	4	7
2	1	5	8
2	2	0	4
2	2	1	5
2	2	2	6
2	2	3	7
2	2	4	8
2	2	5	9

Table C

Posture	Muscle Use	Force/load	Final Score
0	0	0	0
0	0	1	1
0	0	2	2
0	0	3	3
0	0	4	4
0	0	5	5
0	1	0	1
0	1	1	2
0	1	2	3
0	1	3	4
0	1	4	5
0	1	5	6
0	2	0	2
0	2	1	3
0	2	2	4
0	2	3	5
0	2	4	6
0	2	5	7
1	0	0	1
1	0	1	2
1	0	2	3
1	0	3	4
1	0	4	5
1	0	5	6
1	1	0	2
1	1	1	3
1	1	2	4
1	1	3	5
1	1	4	6
1	1	5	7
1	2	0	3
1	2	1	4
1	2	2	5
1	2	3	6
1	2	4	7
1	2	5	8
2	0	0	2
2	0	1	3
2	0	2	4
2	0	3	5
2	0	4	6
2	0	5	7
2	1	0	3
2	1	1	4
2	1	2	5
2	1	3	6
2	1	4	7
2	1	5	8
2	2	0	4
2	2	1	5
2	2	2	6
2	2	3	7
2	2	4	8
2	2	5	9

Final Score = 7

Subject: Sudadi beg kin (AWAL)
Company: Kava Art Stone
Department: Pemahkotaan
Scorer: Adl
Date: 2/07/2015

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately

Source: McAtamney, J. & Corlett, E.N. (1993) RULA: a survey method for the investigation of work-related upper limb disorders. *Applied Ergonomics*, 24(2): 91-99.
 © Professor Alan Hedge, Cornell University, Feb. 2001

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

 Final Upper Arm Score = **2**

Step 2: Locate Lower Arm Position

 Final Lower Arm Score = **2**

Step 3: Locate Wrist Position

 Final Wrist Score = **4**

Step 4: Wrist Twist

 Wrist Twist Score = **1**

Step 5: Look-up Posture Score in Table A
 Locate from steps 1, 2, 3 & 4 to locate Posture Score in Table A.
 Posture Score A = **4**

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or if action repeatedly occurs 4 times per minute or more: +1
 If posture mainly static (i.e. held for longer than 1 minute) or if action repeatedly occurs 4 times per minute or more: +1
 Muscle Use Score = **1**

Step 7: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 20 kg (intermittent): +2
 If more than 20 kg (intermittent): +3
 If load less than 2 kg (continuous): +0
 If 2 kg to 10 kg (continuous): +1
 If 10 kg to 20 kg (continuous): +2
 If more than 20 kg (continuous): +3
 Force/load Score = **0**

Step 8: Find Row in Table C
 The final scores from steps 5, 6, 7 & 8 are used to find the row on Table C.
 Final Wrist & Arm Score = **5**

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

 Final Neck Score = **4**

Step 10: Locate Trunk Position

 Final Trunk Score = **1**

Step 11: Legs

 Final Leg Score = **1**

Step 12: Look-up Posture Score in Table B
 Locate from steps 9, 10 & 11 to locate Posture Score in Table B.
 Posture Score B = **7**

Step 13: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or if action repeatedly occurs 4 times per minute or more: +1
 Muscle Use Score = **1**

Step 14: Add Force/load Score
 If load less than 2 kg (intermittent): +0
 If 2 kg to 10 kg (intermittent): +1
 If 10 kg to 20 kg (intermittent): +2
 If more than 20 kg (intermittent): +3
 If load less than 2 kg (continuous): +0
 If 2 kg to 10 kg (continuous): +1
 If 10 kg to 20 kg (continuous): +2
 If more than 20 kg (continuous): +3
 Force/load Score = **0**

Step 15: Find Column in Table C
 The final scores from steps 12, 13 & 14 are used to find the column on Table C.
 Final Neck, Trunk & Leg Score = **8**

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Wrist Twist	Posture Score A
1	1	1	1	1
1	1	2	1	2
1	1	3	1	3
1	1	4	1	4
1	2	1	1	2
1	2	2	1	3
1	2	3	1	4
1	2	4	1	5
1	3	1	1	3
1	3	2	1	4
1	3	3	1	5
1	3	4	1	6
1	4	1	1	4
1	4	2	1	5
1	4	3	1	6
1	4	4	1	7
2	1	1	1	2
2	1	2	1	3
2	1	3	1	4
2	1	4	1	5
2	2	1	1	3
2	2	2	1	4
2	2	3	1	5
2	2	4	1	6
2	3	1	1	4
2	3	2	1	5
2	3	3	1	6
2	3	4	1	7
2	4	1	1	5
2	4	2	1	6
2	4	3	1	7
2	4	4	1	8
3	1	1	1	3
3	1	2	1	4
3	1	3	1	5
3	1	4	1	6
3	2	1	1	4
3	2	2	1	5
3	2	3	1	6
3	2	4	1	7
3	3	1	1	5
3	3	2	1	6
3	3	3	1	7
3	3	4	1	8
3	4	1	1	6
3	4	2	1	7
3	4	3	1	8
3	4	4	1	9
4	1	1	1	4
4	1	2	1	5
4	1	3	1	6
4	1	4	1	7
4	2	1	1	5
4	2	2	1	6
4	2	3	1	7
4	2	4	1	8
4	3	1	1	6
4	3	2	1	7
4	3	3	1	8
4	3	4	1	9
4	4	1	1	7
4	4	2	1	8
4	4	3	1	9
4	4	4	1	10

Table B

Neck	Trunk	Legs	Posture Score B
1	1	1	1
1	1	2	2
1	1	3	3
1	1	4	4
1	2	1	2
1	2	2	3
1	2	3	4
1	2	4	5
1	3	1	3
1	3	2	4
1	3	3	5
1	3	4	6
1	4	1	4
1	4	2	5
1	4	3	6
1	4	4	7
2	1	1	2
2	1	2	3
2	1	3	4
2	1	4	5
2	2	1	3
2	2	2	4
2	2	3	5
2	2	4	6
2	3	1	4
2	3	2	5
2	3	3	6
2	3	4	7
2	4	1	5
2	4	2	6
2	4	3	7
2	4	4	8
3	1	1	3
3	1	2	4
3	1	3	5
3	1	4	6
3	2	1	4
3	2	2	5
3	2	3	6
3	2	4	7
3	3	1	5
3	3	2	6
3	3	3	7
3	3	4	8
3	4	1	6
3	4	2	7
3	4	3	8
3	4	4	9
4	1	1	4
4	1	2	5
4	1	3	6
4	1	4	7
4	2	1	5
4	2	2	6
4	2	3	7
4	2	4	8
4	3	1	6
4	3	2	7
4	3	3	8
4	3	4	9
4	4	1	7
4	4	2	8
4	4	3	9
4	4	4	10

Table C

Posture Score A	Muscle Use Score	Force/load Score	Final Wrist & Arm Score
1	0	0	1
1	1	0	2
1	2	0	3
1	3	0	4
1	4	0	5
1	5	0	6
1	6	0	7
1	7	0	8
1	8	0	9
1	9	0	10
2	0	0	2
2	1	0	3
2	2	0	4
2	3	0	5
2	4	0	6
2	5	0	7
2	6	0	8
2	7	0	9
2	8	0	10
2	9	0	11
2	10	0	12
3	0	0	3
3	1	0	4
3	2	0	5
3	3	0	6
3	4	0	7
3	5	0	8
3	6	0	9
3	7	0	10
3	8	0	11
3	9	0	12
3	10	0	13
4	0	0	4
4	1	0	5
4	2	0	6
4	3	0	7
4	4	0	8
4	5	0	9
4	6	0	10
4	7	0	11
4	8	0	12
4	9	0	13
4	10	0	14
5	0	0	5
5	1	0	6
5	2	0	7
5	3	0	8
5	4	0	9
5	5	0	10
5	6	0	11
5	7	0	12
5	8	0	13
5	9	0	14
5	10	0	15
6	0	0	6
6	1	0	7
6	2	0	8
6	3	0	9
6	4	0	10
6	5	0	11
6	6	0	12
6	7	0	13
6	8	0	14
6	9	0	15
6	10	0	16
7	0	0	7
7	1	0	8
7	2	0	9
7	3	0	10
7	4	0	11
7	5	0	12
7	6	0	13
7	7	0	14
7	8	0	15
7	9	0	16
7	10	0	17
8	0	0	8
8	1	0	9
8	2	0	10
8	3	0	11
8	4	0	12
8	5	0	13
8	6	0	14
8	7	0	15
8	8	0	16
8	9	0	17
8	10	0	18
9	0	0	9
9	1	0	10
9	2	0	11
9	3	0	12
9	4	0	13
9	5	0	14
9	6	0	15
9	7	0	16
9	8	0	17
9	9	0	18
9	10	0	19
10	0	0	10
10	1	0	11
10	2	0	12
10	3	0	13
10	4	0	14
10	5	0	15
10	6	0	16
10	7	0	17
10	8	0	18
10	9	0	19
10	10	0	20

Final Score = 7

Subject: Dokter bedah Van on (Awal) **Date:** 2/03/15
Company: Jaya AH Stone **Department:** Handicraft **Scorer:** Adi

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately
 Source: McAtamney, J. & Corlett, E.N. (1993) RULA: a survey method for the investigation of work-related upper limb disorders, *Applied Ergonomics*, 24(2) 91-99.
 © Professor Alan Hedge, Cornell University, Feb. 2001

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

Step 2: Locate Lower Arm Position

Step 3: Locate Wrist Position

Step 4: Wrist Twist

Step 5: Look-up Posture Score in Table A

Step 6: Add Muscle Use Score

Step 7: Add Force/load Score

Step 8: Find Row in Table C

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

Step 10: Locate Trunk Position

Step 11: Legs

Step 12: Look-up Posture Score in Table B

Step 13: Add Muscle Use Score

Step 14: Add Force/load Score

Step 15: Find Column in Table C

Final Score = 7

Subject: Bobot bag 12.01 (ADAL)

Company: Java Air Stone

Date: 2/19/15

Department: Penjualan

Scorer: Adi

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately.

Source: McAtamney, J. & Corlett, E.N. (1993). RULA: a survey method for the investigation of work-related upper limb disorders. *Applied Ergonomics*, 24(2) 91-99.
 © Professor Alan Hedge, Cornell University, Feb. 2001

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

 0 to 180°
 If shoulder is raised +1
 If arm is abducted or flexed +1

Step 2: Locate Lower Arm Position

 0 to 180°
 If forearm is pronated or supinated +1

Step 3: Adjust...
 If wrist is bent from the neutral -1
 If wrist is twisted mainly in mid-range +1
 If wrist is bent at or near end of twisting range +2

Step 4: Wrist Twist
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A.

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3 & 4 to locate Posture Score in Table A.

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or factor repeatedly occurs 4 times per minute or more +1
 If load less than 2 kg intermediate +2
 If 2 kg to 10 kg intermediate +3
 If 10 kg to 20 kg static or moderate +4
 If more than 20 kg static or moderate +5

Step 7: Add Force/load Score
 If load less than 2 kg intermediate +2
 If 2 kg to 10 kg intermediate +3
 If 10 kg to 20 kg static or moderate +4
 If more than 20 kg static or moderate +5

Step 8: Find Row in Table C
 The combined score from the Arm/wrist analysis is used to find the row of Table C.

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

 0 to 180°
 If neck is bent +1
 If neck is extended +1

Step 10: Locate Trunk Position

 0 to 180°
 If trunk is bent +1
 If trunk is extended +1

Step 11: Legs
 If legs are bent +1
 If legs are extended +1
 If legs are static +1

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10, 11 & 12 to locate Posture Score in Table B.

Step 13: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or factor repeatedly occurs 4 times per minute or more +1
 If load less than 2 kg intermediate +2
 If 2 kg to 10 kg intermediate +3
 If 10 kg to 20 kg static or moderate +4
 If more than 20 kg static or moderate +5

Step 14: Add Force/load Score
 If load less than 2 kg intermediate +2
 If 2 kg to 10 kg intermediate +3
 If 10 kg to 20 kg static or moderate +4
 If more than 20 kg static or moderate +5

Step 15: Find Column in Table C
 The combined score from the Neck/trunk & leg analysis is used to find the column of Table C.

SCORES

Table A

Shoulder	Forearm	Wrist	Posture Score
1	1	1	1
1	1	2	2
1	1	3	3
1	1	4	4
1	1	5	5
1	2	1	2
1	2	2	3
1	2	3	4
1	2	4	5
1	2	5	6
1	3	1	3
1	3	2	4
1	3	3	5
1	3	4	6
1	3	5	7
1	4	1	4
1	4	2	5
1	4	3	6
1	4	4	7
1	4	5	8
2	1	1	2
2	1	2	3
2	1	3	4
2	1	4	5
2	1	5	6
2	2	1	3
2	2	2	4
2	2	3	5
2	2	4	6
2	2	5	7
2	3	1	4
2	3	2	5
2	3	3	6
2	3	4	7
2	3	5	8
2	4	1	5
2	4	2	6
2	4	3	7
2	4	4	8
2	4	5	9
3	1	1	3
3	1	2	4
3	1	3	5
3	1	4	6
3	1	5	7
3	2	1	4
3	2	2	5
3	2	3	6
3	2	4	7
3	2	5	8
3	3	1	5
3	3	2	6
3	3	3	7
3	3	4	8
3	3	5	9
3	4	1	6
3	4	2	7
3	4	3	8
3	4	4	9
3	4	5	10

Table B

Neck	Trunk	Legs	Posture Score
1	1	1	1
1	1	2	2
1	1	3	3
1	1	4	4
1	1	5	5
1	2	1	2
1	2	2	3
1	2	3	4
1	2	4	5
1	2	5	6
1	3	1	3
1	3	2	4
1	3	3	5
1	3	4	6
1	3	5	7
1	4	1	4
1	4	2	5
1	4	3	6
1	4	4	7
1	4	5	8
2	1	1	2
2	1	2	3
2	1	3	4
2	1	4	5
2	1	5	6
2	2	1	3
2	2	2	4
2	2	3	5
2	2	4	6
2	2	5	7
2	3	1	4
2	3	2	5
2	3	3	6
2	3	4	7
2	3	5	8
2	4	1	5
2	4	2	6
2	4	3	7
2	4	4	8
2	4	5	9
3	1	1	3
3	1	2	4
3	1	3	5
3	1	4	6
3	1	5	7
3	2	1	4
3	2	2	5
3	2	3	6
3	2	4	7
3	2	5	8
3	3	1	5
3	3	2	6
3	3	3	7
3	3	4	8
3	3	5	9
3	4	1	6
3	4	2	7
3	4	3	8
3	4	4	9
3	4	5	10

Table C

Arm/wrist	Neck/trunk & leg	Posture Score
1	1	1
1	2	2
1	3	3
1	4	4
1	5	5
1	6	6
1	7	7
1	8	8
1	9	9
1	10	10
2	1	2
2	2	3
2	3	4
2	4	5
2	5	6
2	6	7
2	7	8
2	8	9
2	9	10
2	10	11
3	1	3
3	2	4
3	3	5
3	4	6
3	5	7
3	6	8
3	7	9
3	8	10
3	9	11
3	10	12
4	1	4
4	2	5
4	3	6
4	4	7
4	5	8
4	6	9
4	7	10
4	8	11
4	9	12
4	10	13
5	1	5
5	2	6
5	3	7
5	4	8
5	5	9
5	6	10
5	7	11
5	8	12
5	9	13
5	10	14

Final Score = 5

Subject: Samudra Beg. Kencana Sekarang **Date:** 1/1/2023
Company: Jawa Ab. Sora **Department:** Ramah a.k.a **Score:** Agil Prizanto

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate and change immediately
 Source: McAtamney, J. & Corlett, E.N. (1993) RULA: a survey method for the investigation of upper limb disorders. *Applied Ergonomics*, 24(2), 91-99
 ©1993 Taylor & Francis, Physical Therapy, 2nd edn

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

 0 to 120°
 If shoulder is flexed: +1
 If upper arm is abducted: +2
 If arm is abducted or extended: +3

Step 1a: Adjust...
 If shoulder is flexed: +1
 If upper arm is abducted: +2
 If arm is abducted or extended: +3

Step 2: Locate Lower Arm Position

 0 to 180°
 If forearm is pronated: +1
 If forearm is supinated: +2
 If forearm is neutral: +3

Step 2a: Adjust...
 If forearm is pronated: +1
 If forearm is supinated: +2
 If forearm is neutral: +3

Step 3: Locate Wrist Position

 0 to 15°
 If wrist is bent from the midline: +1
 If wrist is twisted: +2
 If wrist is bent and twisted: +3

Step 3a: Adjust...
 If wrist is bent from the midline: +1
 If wrist is twisted: +2
 If wrist is bent and twisted: +3

Step 4: Wrist Twist
 If wrist is twisted: +1
 If wrist is bent and twisted: +2
 If wrist is bent: +3

Step 5: Look-up Posture Score in Table A
 Use values from steps 1, 2, 3, 4 to locate Posture Score in Table A.

Step 6: Add Muscle Use Score
 If posture mainly static (i.e. held for longer than 1 minute) or if load/resistance occurs 4 times per minute or more: +1
 If load less than 2 kg (4.4 lb): +2
 If 2 kg to 10 kg (4.4 to 22 lb): +3
 If 10 kg to 15 kg (22 to 33 lb): +4
 If more than 15 kg (33 lb) or load or resistance of more: +5

Step 7: Add Force/load Score
 If load less than 2 kg (4.4 lb): +2
 If 2 kg to 10 kg (4.4 to 22 lb): +3
 If 10 kg to 15 kg (22 to 33 lb): +4
 If more than 15 kg (33 lb) or load or resistance of more: +5

Step 8: Find Row in Table C
 The combined score from the previous steps is used to find the row in Table C.

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

 0 to 20°
 If neck is flexed: +1
 If neck is extended: +2
 If neck is neutral: +3

Step 9a: Adjust...
 If neck is flexed: +1
 If neck is extended: +2
 If neck is neutral: +3

Step 10: Locate Trunk Position

 0 to 30°
 If trunk is flexed: +1
 If trunk is extended: +2
 If trunk is neutral: +3

Step 10a: Adjust...
 If trunk is flexed: +1
 If trunk is extended: +2
 If trunk is neutral: +3

Step 11: Legs

 0 to 15°
 If legs are bent: +1
 If legs are straight: +2
 If legs are neutral: +3

Step 11a: Adjust...
 If legs are bent: +1
 If legs are straight: +2
 If legs are neutral: +3

Step 12: Look-up Posture Score in Table B
 Use values from steps 9, 10, 11 to locate Posture Score in Table B.

Step 13: Add Muscle Use Score
 If posture mainly static or if load/resistance occurs 4 times per minute or more: +1
 If load less than 2 kg (4.4 lb): +2
 If 2 kg to 10 kg (4.4 to 22 lb): +3
 If 10 kg to 15 kg (22 to 33 lb): +4
 If more than 15 kg (33 lb) or load or resistance of more: +5

Step 14: Add Force/load Score
 If load less than 2 kg (4.4 lb): +2
 If 2 kg to 10 kg (4.4 to 22 lb): +3
 If 10 kg to 15 kg (22 to 33 lb): +4
 If more than 15 kg (33 lb) or load or resistance of more: +5

Step 15: Find Column in Table C
 The combined score from the previous steps is used to find the column in Table C.

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Twist	Muscle Use	Force/Load	Posture Score
1	1	1	1	1	1	1
1	1	1	2	1	1	2
1	1	1	3	1	1	3
1	1	2	1	1	1	4
1	1	2	2	1	1	5
1	1	2	3	1	1	6
1	1	3	1	1	1	7
1	1	3	2	1	1	8
1	1	3	3	1	1	9
1	2	1	1	1	1	10
1	2	1	2	1	1	11
1	2	1	3	1	1	12
1	2	2	1	1	1	13
1	2	2	2	1	1	14
1	2	2	3	1	1	15
1	2	3	1	1	1	16
1	2	3	2	1	1	17
1	2	3	3	1	1	18
2	1	1	1	1	1	19
2	1	1	2	1	1	20
2	1	1	3	1	1	21
2	1	2	1	1	1	22
2	1	2	2	1	1	23
2	1	2	3	1	1	24
2	1	3	1	1	1	25
2	1	3	2	1	1	26
2	1	3	3	1	1	27
2	2	1	1	1	1	28
2	2	1	2	1	1	29
2	2	1	3	1	1	30
2	2	2	1	1	1	31
2	2	2	2	1	1	32
2	2	2	3	1	1	33
2	2	3	1	1	1	34
2	2	3	2	1	1	35
2	2	3	3	1	1	36
3	1	1	1	1	1	37
3	1	1	2	1	1	38
3	1	1	3	1	1	39
3	1	2	1	1	1	40
3	1	2	2	1	1	41
3	1	2	3	1	1	42
3	1	3	1	1	1	43
3	1	3	2	1	1	44
3	1	3	3	1	1	45
3	2	1	1	1	1	46
3	2	1	2	1	1	47
3	2	1	3	1	1	48
3	2	2	1	1	1	49
3	2	2	2	1	1	50
3	2	2	3	1	1	51
3	2	3	1	1	1	52
3	2	3	2	1	1	53
3	2	3	3	1	1	54
4	1	1	1	1	1	55
4	1	1	2	1	1	56
4	1	1	3	1	1	57
4	1	2	1	1	1	58
4	1	2	2	1	1	59
4	1	2	3	1	1	60
4	1	3	1	1	1	61
4	1	3	2	1	1	62
4	1	3	3	1	1	63
4	2	1	1	1	1	64
4	2	1	2	1	1	65
4	2	1	3	1	1	66
4	2	2	1	1	1	67
4	2	2	2	1	1	68
4	2	2	3	1	1	69
4	2	3	1	1	1	70
4	2	3	2	1	1	71
4	2	3	3	1	1	72
5	1	1	1	1	1	73
5	1	1	2	1	1	74
5	1	1	3	1	1	75
5	1	2	1	1	1	76
5	1	2	2	1	1	77
5	1	2	3	1	1	78
5	1	3	1	1	1	79
5	1	3	2	1	1	80
5	1	3	3	1	1	81
5	2	1	1	1	1	82
5	2	1	2	1	1	83
5	2	1	3	1	1	84
5	2	2	1	1	1	85
5	2	2	2	1	1	86
5	2	2	3	1	1	87
5	2	3	1	1	1	88
5	2	3	2	1	1	89
5	2	3	3	1	1	90

Table B

Neck	Trunk	Legs	Muscle Use	Force/Load	Posture Score
1	1	1	1	1	1
1	1	1	2	1	2
1	1	1	3	1	3
1	1	2	1	1	4
1	1	2	2	1	5
1	1	2	3	1	6
1	1	3	1	1	7
1	1	3	2	1	8
1	1	3	3	1	9
1	2	1	1	1	10
1	2	1	2	1	11
1	2	1	3	1	12
1	2	2	1	1	13
1	2	2	2	1	14
1	2	2	3	1	15
1	2	3	1	1	16
1	2	3	2	1	17
1	2	3	3	1	18
2	1	1	1	1	19
2	1	1	2	1	20
2	1	1	3	1	21
2	1	2	1	1	22
2	1	2	2	1	23
2	1	2	3	1	24
2	1	3	1	1	25
2	1	3	2	1	26
2	1	3	3	1	27
2	2	1	1	1	28
2	2	1	2	1	29
2	2	1	3	1	30
2	2	2	1	1	31
2	2	2	2	1	32
2	2	2	3	1	33
2	2	3	1	1	34
2	2	3	2	1	35
2	2	3	3	1	36
3	1	1	1	1	37
3	1	1	2	1	38
3	1	1	3	1	39
3	1	2	1	1	40
3	1	2	2	1	41
3	1	2	3	1	42
3	1	3	1	1	43
3	1	3	2	1	44
3	1	3	3	1	45
3	2	1	1	1	46
3	2	1	2	1	47
3	2	1	3	1	48
3	2	2	1	1	49
3	2	2	2	1	50
3	2	2	3	1	51
3	2	3	1	1	52
3	2	3	2	1	53
3	2	3	3	1	54
4	1	1	1	1	55
4	1	1	2	1	56
4	1	1	3	1	57
4	1	2	1	1	58
4	1	2	2	1	59
4	1	2	3	1	60
4	1	3	1	1	61
4	1	3	2	1	62
4	1	3	3	1	63
4	2	1	1	1	64
4	2	1	2	1	65
4	2	1	3	1	66
4	2	2	1	1	67
4	2	2	2	1	68
4	2	2	3	1	69
4	2	3	1	1	70
4	2	3	2	1	71
4	2	3	3	1	72
5	1	1	1	1	73
5	1	1	2	1	74
5	1	1	3	1	75
5	1	2	1	1	76
5	1	2	2	1	77
5	1	2	3	1	78
5	1	3	1	1	79
5	1	3	2	1	80
5	1	3	3	1	81
5	2	1	1	1	82
5	2	1	2	1	83
5	2	1	3	1	84
5	2	2	1	1	85
5	2	2	2	1	86
5	2	2	3	1	87
5	2	3	1	1	88
5	2	3	2	1	89
5	2	3	3	1	90

Table C

Posture Score	Muscle Use Score	Force/Load Score	Final Score
1	1	1	1
1	1	2	2
1	1	3	3
1	1	4	4
1	1	5	5
1	2	1	6
1	2	2	7
1	2	3	8
1	2	4	9
1	2	5	10
1	3	1	11
1	3	2	12
1	3	3	13
1	3	4	14
1	3	5	15
1	4	1	16
1	4	2	17
1	4	3	18
1	4	4	19
1	4	5	20
2	1	1	21
2	1	2	22
2	1	3	23
2	1	4	24
2	1	5	25
2	2	1	26
2	2	2	27
2	2	3	28
2	2	4	29
2	2	5	30
2	3	1	31
2	3	2	32
2	3	3	33
2	3	4	34
2	3	5	35
2	4	1	36
2	4	2	37
2	4	3	38
2	4	4	39
2	4	5	40
3	1	1	41
3	1	2	42
3	1	3	43
3	1	4	44
3	1	5	45
3	2	1	46
3	2	2	47
3	2	3	48
3	2	4	49
3	2	5	50
3	3	1	51
3	3	2	52
3	3	3	53
3	3	4	54
3	3	5	55
3	4	1	56
3	4	2	57
3	4	3	58
3	4	4	59
3	4	5	60
4	1	1	61
4	1	2	62
4	1	3	63
4	1	4	64
4	1	5	65
4	2	1	66
4	2	2	67
4	2	3	68
4	2	4	69
4	2	5	70
4	3	1	71
4	3	2	72
4	3	3	73
4	3	4	74
4	3	5	75
4	4	1	

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position

Step 2a: Adjust...

Step 2b: Adjust...

Step 3: Locate Wrist Position

Step 3a: Adjust...

Step 4: Wrist Twist

Step 5: Look-up Posture Score in Table A

Step 6: Add Muscle Use Score

Step 7: Add Force/load Score

Step 8: Find Row in Table C

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position

Step 10: Locate Trunk Position

Step 11: Legs

Step 12: Look-up Posture Score in Table B

Step 13: Add Muscle Use Score

Step 14: Add Force/load Score

Step 15: Find Column in Table C

SCORES

Table A

Wrist	Upper Arm	Score
1	1	1
1	2	2
1	3	3
1	4	4
1	5	5
1	6	6
1	7	7
1	8	8
1	9	9
1	10	10
1	11	11
1	12	12
1	13	13
1	14	14
1	15	15
1	16	16
1	17	17
1	18	18
1	19	19
1	20	20
1	21	21
1	22	22
1	23	23
1	24	24
1	25	25
1	26	26
1	27	27
1	28	28
1	29	29
1	30	30
1	31	31
1	32	32
1	33	33
1	34	34
1	35	35
1	36	36
1	37	37
1	38	38
1	39	39
1	40	40
1	41	41
1	42	42
1	43	43
1	44	44
1	45	45
1	46	46
1	47	47
1	48	48
1	49	49
1	50	50
1	51	51
1	52	52
1	53	53
1	54	54
1	55	55
1	56	56
1	57	57
1	58	58
1	59	59
1	60	60
1	61	61
1	62	62
1	63	63
1	64	64
1	65	65
1	66	66
1	67	67
1	68	68
1	69	69
1	70	70
1	71	71
1	72	72
1	73	73
1	74	74
1	75	75
1	76	76
1	77	77
1	78	78
1	79	79
1	80	80
1	81	81
1	82	82
1	83	83
1	84	84
1	85	85
1	86	86
1	87	87
1	88	88
1	89	89
1	90	90
1	91	91
1	92	92
1	93	93
1	94	94
1	95	95
1	96	96
1	97	97
1	98	98
1	99	99
1	100	100

Table B

Neck	Trunk	Legs	Score
1	1	1	1
1	2	1	2
1	3	1	3
1	4	1	4
1	5	1	5
1	6	1	6
1	7	1	7
1	8	1	8
1	9	1	9
1	10	1	10
1	11	1	11
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1	90	1	90
1	91	1	91
1	92	1	92
1	93	1	93
1	94	1	94
1	95	1	95
1	96	1	96
1	97	1	97
1	98	1	98
1	99	1	99
1	100	1	100

Table C

Wrist	Upper Arm	Neck	Trunk	Legs	Score
1	1	1	1	1	1
1	2	1	2	1	2
1	3	1	3	1	3
1	4	1	4	1	4
1	5	1	5	1	5
1	6	1	6	1	6
1	7	1	7	1	7
1	8	1	8	1	8
1	9	1	9	1	9
1	10	1	10	1	10
1	11	1	11	1	11
1	12	1	12	1	12
1	13	1	13	1	13
1	14	1	14	1	14
1	15	1	15	1	15
1	16	1	16	1	16
1	17	1	17	1	17
1	18	1	18	1	18
1	19	1	19	1	19
1	20	1	20	1	20
1	21	1	21	1	21
1	22	1	22	1	22
1	23	1	23	1	23
1	24	1	24	1	24
1	25	1	25	1	25
1	26	1	26	1	26
1	27	1	27	1	27
1	28	1	28	1	28
1	29	1	29	1	29
1	30	1	30	1	30
1	31	1	31	1	31
1	32	1	32	1	32
1	33	1	33	1	33
1	34	1	34	1	34
1	35	1	35	1	35
1	36	1	36	1	36
1	37	1	37	1	37
1	38	1	38	1	38
1	39	1	39	1	39
1	40	1	40	1	40
1	41	1	41	1	41
1	42	1	42	1	42
1	43	1	43	1	43
1	44	1	44	1	44
1	45	1	45	1	45
1	46	1	46	1	46
1	47	1	47	1	47
1	48	1	48	1	48
1	49	1	49	1	49
1	50	1	50	1	50
1	51	1	51	1	51
1	52	1	52	1	52
1	53	1	53	1	53
1	54	1	54	1	54
1	55	1	55	1	55
1	56	1	56	1	56
1	57	1	57	1	57
1	58	1	58	1	58
1	59	1	59	1	59
1	60	1	60	1	60
1	61	1	61	1	61
1	62	1	62	1	62
1	63	1	63	1	63
1	64	1	64	1	64
1	65	1	65	1	65
1	66	1	66	1	66
1	67	1	67	1	67
1	68	1	68	1	68
1	69	1	69	1	69
1	70	1	70	1	70
1	71	1	71	1	71
1	72	1	72	1	72
1	73	1	73	1	73
1	74	1	74	1	74
1	75	1	75	1	75
1	76	1	76	1	76
1	77	1	77	1	77
1	78	1	78	1	78
1	79	1	79	1	79
1	80	1	80	1	80
1	81	1	81	1	81
1	82	1	82	1	82
1	83	1	83	1	83
1	84	1	84	1	84
1	85	1	85	1	85
1	86	1	86	1	86
1	87	1	87	1	87
1	88	1	88	1	88
1	89	1	89	1	89
1	90	1	90	1	90
1	91	1	91	1	91
1	92	1	92	1	92
1	93	1	93	1	93
1	94	1	94	1	94
1	95	1	95	1	95
1	96	1	96	1	96
1	97	1	97	1	97
1	98	1	98	1	98
1	99	1	99	1	99
1	100	1	100	1	100

Final Score = 5

FINAL SCORE: 1 or 2 = Acceptable; 3 or 4 investigate further; 5 or 6 investigate further and change soon; 7 investigate further and change immediately

Source: *McAtamney, L. & Corlett, E.N. (1993). RULA: a simple method for the investigation of work-related upper limb disorders. Applied Ergonomics, 24(2), 91-99.*

© Professor Jim Hasle, Cornell University, Feb. 2002

Subject: Dip. bag. Kanan Pekanbaru

Company: Jaya Air Group

Date: 11/11/2023

Department: Pemeliharaan

Scorer: Adi Pratiwi

RULA Employee Assessment Worksheet

Complete this worksheet following the step-by-step procedure below. Keep a copy in the employee's personnel folder for future reference.

A. Arm & Wrist Analysis

Step 1: Locate Upper Arm Position
Locate the upper arm position relative to the body. If the arm is extended forward, it is 0°. If the arm is bent at the elbow, it is 10° to 20°.

Step 2a: Adjust...
If the arm is bent at the elbow, it is 10° to 20°. If the arm is extended forward, it is 0°.

Step 2: Locate Lower Arm Position
Locate the lower arm position relative to the upper arm. If the lower arm is straight, it is 0°. If the lower arm is bent, it is 10° to 20°.

Step 2a: Adjust...
If the lower arm is bent, it is 10° to 20°. If the lower arm is straight, it is 0°.

Step 3: Locate Wrist Position
Locate the wrist position relative to the forearm. If the wrist is straight, it is 0°. If the wrist is bent, it is 10° to 20°.

Step 3a: Adjust...
If the wrist is bent, it is 10° to 20°. If the wrist is straight, it is 0°.

Step 4: Wrist Twist
If the wrist is twisted, it is 10° to 20°. If the wrist is straight, it is 0°.

Step 5: Look-up Posture Score in Table A
Use values from steps 1, 2, 3, 4 to locate Posture Score in Table A.

Step 6: Add Muscle Use Score
If posture requires static (i.e. hold for longer than 1 minute or if action repeated) add 4 times per minute or more = +1

Step 7: Add Forceload Score
If load exceeds 2 kg, add +1.
If load exceeds 5 kg, add +2.
If load exceeds 10 kg, add +3.
If load exceeds 15 kg, add +4.

Step 8: Find Row in Table C
The combined score from the Arm/Wrist analysis is used to find the row on Table C.

B. Neck, Trunk & Leg Analysis

Step 9: Locate Neck Position
Locate the neck position relative to the body. If the neck is straight, it is 0°. If the neck is bent, it is 10° to 20°.

Step 9a: Adjust...
If the neck is bent, it is 10° to 20°. If the neck is straight, it is 0°.

Step 10: Locate Trunk Position
Locate the trunk position relative to the body. If the trunk is straight, it is 0°. If the trunk is bent, it is 10° to 20°.

Step 10a: Adjust...
If the trunk is bent, it is 10° to 20°. If the trunk is straight, it is 0°.

Step 11: Legs
If legs are straight, add +1. If legs are bent, add +2.

Step 12: Look-up Posture Score in Table B
Use values from steps 9, 10, 11 to locate Posture Score in Table B.

Step 13: Add Muscle Use Score
If posture requires static (i.e. hold for longer than 1 minute or if action repeated) add 4 times per minute or more = +1

Step 14: Add Forceload Score
If load exceeds 2 kg, add +1.
If load exceeds 5 kg, add +2.
If load exceeds 10 kg, add +3.
If load exceeds 15 kg, add +4.

Step 15: Find Column in Table C
The combined score from the Neck/Trunk/Leg analysis is used to find the column on Table C.

SCORES

Table A

Upper Arm	Lower Arm	Wrist	Twist	Score
0°	0°	0°	0°	1
0°	0°	10°	0°	2
0°	0°	20°	0°	3
0°	10°	0°	0°	4
0°	10°	10°	0°	5
0°	10°	20°	0°	6
0°	20°	0°	0°	7
0°	20°	10°	0°	8
0°	20°	20°	0°	9
10°	0°	0°	0°	10
10°	0°	10°	0°	11
10°	0°	20°	0°	12
10°	10°	0°	0°	13
10°	10°	10°	0°	14
10°	10°	20°	0°	15
10°	20°	0°	0°	16
10°	20°	10°	0°	17
10°	20°	20°	0°	18
20°	0°	0°	0°	19
20°	0°	10°	0°	20
20°	0°	20°	0°	21
20°	10°	0°	0°	22
20°	10°	10°	0°	23
20°	10°	20°	0°	24
20°	20°	0°	0°	25
20°	20°	10°	0°	26
20°	20°	20°	0°	27
30°	0°	0°	0°	28
30°	0°	10°	0°	29
30°	0°	20°	0°	30
30°	10°	0°	0°	31
30°	10°	10°	0°	32
30°	10°	20°	0°	33
30°	20°	0°	0°	34
30°	20°	10°	0°	35
30°	20°	20°	0°	36
40°	0°	0°	0°	37
40°	0°	10°	0°	38
40°	0°	20°	0°	39
40°	10°	0°	0°	40
40°	10°	10°	0°	41
40°	10°	20°	0°	42
40°	20°	0°	0°	43
40°	20°	10°	0°	44
40°	20°	20°	0°	45

Table B

Neck	Trunk	Legs	Score
0°	0°	0°	1
0°	0°	10°	2
0°	0°	20°	3
0°	10°	0°	4
0°	10°	10°	5
0°	10°	20°	6
0°	20°	0°	7
0°	20°	10°	8
0°	20°	20°	9
10°	0°	0°	10
10°	0°	10°	11
10°	0°	20°	12
10°	10°	0°	13
10°	10°	10°	14
10°	10°	20°	15
10°	20°	0°	16
10°	20°	10°	17
10°	20°	20°	18
20°	0°	0°	19
20°	0°	10°	20
20°	0°	20°	21
20°	10°	0°	22
20°	10°	10°	23
20°	10°	20°	24
20°	20°	0°	25
20°	20°	10°	26
20°	20°	20°	27
30°	0°	0°	28
30°	0°	10°	29
30°	0°	20°	30
30°	10°	0°	31
30°	10°	10°	32
30°	10°	20°	33
30°	20°	0°	34
30°	20°	10°	35
30°	20°	20°	36
40°	0°	0°	37
40°	0°	10°	38
40°	0°	20°	39
40°	10°	0°	40
40°	10°	10°	41
40°	10°	20°	42
40°	20°	0°	43
40°	20°	10°	44
40°	20°	20°	45

Table C

Row	Column	Score
1	1	1
1	2	2
1	3	3
1	4	4
1	5	5
1	6	6
1	7	7
1	8	8
1	9	9
1	10	10
1	11	11
1	12	12
1	13	13
1	14	14
1	15	15
1	16	16
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1	91	91
1	92	92
1	93	93
1	94	94
1	95	95
1	96	96
1	97	97
1	98	98
1	99	99
1	100	100

Final Score = 5

Subject: Rui King Schwabing

Company: Java Air

Date: 11/11/2020

Department: Pemeliharaan

Score: 4