LAMPIRAN 1

- **DATA WAKTU PROSES DAN DATA WAKTU HANDLING**

Waktu Proses Untuk Forging Brake Shoe

Data Ke-	Waktu (detik)
1	5.88
2	4.88
3	4.42
4	5.47
5	4.5
6	4.64
7	6.5
8	4.9
9	5.04
10	7.55
11	4.35
12	4.64
13	6.74
14	5.02
15	4.58
16	6.57
17	6.3
18	7.67
19	7.24
20	4.05
21	5.52
22	7.08
23	4.91
24	7.11
25	6.46
26	5.17
27	7.1
28	7.13
29	7.3
30	7.06

Waktu Proses Untuk Bending Arm XC

Data Ke-	Waktu (detik)
1	25.26
2	24.62
3	23.84
4	23.93
5	25.83
6	23.22
7	19.79
8	23.56
9	21.44
10	22.79
11	21.68
12	24.66
13	22.21
14	26.14
15	22.32
16	23.17
17	25.59
18	21.88
19	26.34
20	23.29
21	23.58
22	24.7
23	21.46
24	21.2
25	23.54
26	25.92
27	24.81
28	24.71
29	22.42
30	21.64

Waktu Proses Untuk Piercing Arm XC

Data Ke-	Waktu (detik)
1	24.92
2	25.93
3	26.44
4	24.22
5	25.2
6	25.28
7	24.49
8	24.48
9	26.21
10	22.91
11	25.54
12	24.66
13	25.97
14	23.65
15	24.69
16	24.32
17	25.7
18	25.32
19	22.76
20	25.09
21	26.66
22	27.45
23	24.22
24	25.8
25	23.41
26	25.32
27	24.5
28	25.11
29	22.76
30	23.12

Waktu Proses Untuk Cutting Arm XC

Data Ke-	Waktu (detik)
1	13.38
2	15.68
3	13.69
4	10.98
5	17.59
6	13.88
7	14.05
8	11.58
9	13.75
10	10.79
11	9.74
12	12.79
13	11.99
14	14.19
15	10.07
16	8.04
17	12.31
18	10.97
19	15.52
20	12.31
21	7.86
22	12.98
23	14.63
24	12.81
25	15.23
26	10.08
27	6.29
28	13.64
29	10.18
30	9.42

Waktu Proses Untuk Assembly 1

XC

Data Ke-	Waktu (detik)
1	66.89
2	67.89
3	65.83
4	66.18
5	73.86
6	73.46
7	65.33
8	72.66
9	65.86
10	66.44
11	64.25
12	64.16
13	70.5
14	72.52
15	71.71
16	66.06
17	79.7
18	76.31
19	81.08
20	72.84
21	66.68
22	67.02
23	73.17
24	76.63
25	73.15
26	74.15
27	73.23
28	67.16
29	76.52
30	79.11

Waktu Proses Untuk Assembly 2

XC

Data Ke-	Waktu (detik)
1	36.23
2	35.11
3	33.28
4	45.19
5	39.29
6	39.88
7	37.52
8	41.71
9	38.21
10	33.65
11	39.47
12	39.89
13	37.81
14	42.97
15	35.19
16	33.99
17	34.31
18	32.87
19	36.34
20	37.02
21	39.96
22	34.52
23	37.52
24	32.24
25	33.48
26	39.06
27	42.6
28	33.02
29	36.33
30	34.02

Waktu Proses Untuk Blank Rod XC

Data Ke-	Waktu (detik)
1	3.82
2	4.77
3	2.56
4	4.53
5	3.97
6	2.99
7	4.94
8	3.17
9	3.6
10	4.76
11	3.22
12	5.97
13	2.94
14	2.07
15	4.24
16	2.3
17	3.47
18	4.04
19	2.16
20	5.94
21	2.66
22	3.64
23	4.92
24	2.07
25	3.26
26	5.84
27	2.71
28	3.67
29	4.7
30	3.69

Waktu Proses Untuk Piercing Rod XC

Data Ke-	Waktu (detik)
1	18.18
2	13.69
3	15.24
4	12.88
5	14.57
6	15.57
7	13.56
8	17.74
9	16.57
10	15.38
11	20.05
12	17.42
13	14.56
14	16.41
15	13.85
16	14.81
17	15.64
18	17.32
19	16.44
20	15.38
21	14.78
22	19.22
23	15.6
24	16.25
25	12.96
26	15.71
27	14.94
28	15.96
29	12.69
30	17.12

Waktu Proses Untuk Bending 1

Arm H10

Data Ke-	Waktu (detik)
1	17.8
2	21.11
3	19.14
4	17.52
5	20.22
6	19.83
7	20.62
8	19.73
9	18.81
10	20.04
11	19.14
12	18.44
13	21.04
14	17.61
15	19.43
16	18.07
17	16.91
18	18.55
19	19.42
20	17.03
21	18.85
22	17.63
23	17.31
24	19.5
25	20.04
26	18.65
27	17.67
28	18.6
29	18.27
30	16.84

Waktu Proses Untuk Bending 2

Arm H10

Data Ke-	Waktu (detik)
1	11.01
2	10.9
3	10.21
4	16.41
5	8.66
6	11.32
7	16.16
8	12.65
9	15.78
10	14.53
11	16.7
12	15.66
13	6.86
14	7.12
15	13.25
16	14.88
17	10.35
18	11.92
19	13.51
20	14.04
21	15.21
22	10.76
23	15.7
24	10.67
25	12.31
26	8.16
27	15.85
28	9.6
29	12.93
30	14.9

Waktu Proses Untuk Piercing Arm H10

Data Ke-	Waktu (detik)
1	24.69
2	23.31
3	25.86
4	23.64
5	26.6
6	27.14
7	22.61
8	24.36
9	23.34
10	23.42
11	24.08
12	24.19
13	24.86
14	25.38
15	23.25
16	23.42
17	23.53
18	27.51
19	23.5
20	25.41
21	24.72
22	23.31
23	24.17
24	23.06
25	23.7
26	25.21
27	22.54
28	24.96
29	24.39
30	24.9

Waktu Proses Untuk Cutting Arm H10

Data Ke-	Waktu (detik)
1	9.51
2	14.94
3	11.84
4	12.44
5	10.34
6	11.63
7	10.74
8	12.62
9	13.81
10	10.31
11	14.05
12	8.14
13	15.33
14	11.18
15	14.95
16	12.35
17	9.12
18	11.92
19	13.3
20	11.41
21	9.72
22	10.4
23	15.54
24	8.08
25	11.31
26	16.13
27	10.44
28	13.66
29	14.93
30	8.74

Waktu Proses Untuk Assembly 1

H10

Data Ke-	Waktu (detik)
1	105.02
2	101.34
3	97.25
4	101.72
5	104.95
6	98.35
7	102.8
8	106.13
9	105.93
10	102.51
11	99.59
12	101.68
13	97.37
14	100.25
15	104.12
16	101.46
17	97.67
18	99.13
19	102.38
20	98.44
21	102.18
22	99.24
23	98.18
24	100.49
25	102.42
26	98.91
27	100.68
28	99.64
29	104.47
30	102.94

Waktu Proses Untuk Assembly 2

H10

Data Ke-	Waktu (detik)
1	34.81
2	31.08
3	32.09
4	29.54
5	34.74
6	31.19
7	32.56
8	34.19
9	31.99
10	32.46
11	31.95
12	33.9
13	32.64
14	30.96
15	31.87
16	34.14
17	32.06
18	29.42
19	37.11
20	34.37
21	34.61
22	33.79
23	31.9
24	31.46
25	33.22
26	27.81
27	31.66
28	31.21
29	33.91
30	29.41

Waktu Proses Untuk Blank Rod H10

Data Ke-	Waktu (detik)
1	4.66
2	5.42
3	4.97
4	4.85
5	5.24
6	5.98
7	6.75
8	5.14
9	4.84
10	5.65
11	5.95
12	5.46
13	4.95
14	4.25
15	4.38
16	3.15
17	5.75
18	4.94
19	5.15
20	5.64
21	5.83
22	6.54
23	4.23
24	5.17
25	4.9
26	4.11
27	3.21
28	5.49
29	5.22
30	6.91

Waktu Proses Untuk Piercing Rod H10

Data Ke-	Waktu (detik)
1	16.74
2	16.16
3	15.94
4	16.74
5	10.19
6	11.76
7	16.35
8	15.91
9	13.24
10	12.64
11	11.62
12	9.27
13	14.35
14	11.2
15	16.94
16	12.41
17	14.84
18	9.08
19	13.12
20	16.82
21	13.63
22	15.45
23	11.16
24	14.99
25	13.18
26	9.75
27	14.42
28	12.64
29	14.5
30	13.84

Waktu Proses Untuk Bending Rod H10

Data Ke-	Waktu (detik)
1	16.66
2	14.48
3	16.7
4	14.55
5	14.35
6	16.12
7	13.37
8	16.79
9	16.88
10	13.14
11	13.81
12	15.37
13	15.78
14	14.53
15	12.9
16	14.89
17	14.2
18	11.41
19	11.55
20	12.14
21	13.28
22	15.72
23	14.44
24	11.91
25	12.47
26	13.46
27	11.08
28	16.08
29	13.06
30	15.24

Waktu Proses Untuk Bending 1 Arm H00

Data Ke-	Waktu (detik)
1	17.8
2	21.11
3	19.14
4	17.52
5	20.22
6	19.83
7	20.62
8	19.73
9	18.81
10	20.04
11	19.14
12	18.44
13	21.04
14	17.61
15	19.43
16	18.07
17	16.91
18	18.55
19	19.42
20	17.03
21	18.85
22	17.63
23	17.31
24	19.5
25	20.04
26	18.65
27	17.67
28	18.6
29	18.27
30	16.84

Waktu Proses Untuk Bending 2 Arm H00

Data Ke-	Waktu (detik)
1	12.82
2	14.14
3	16.76
4	15.14
5	14.48
6	16.14
7	12.43
8	11.95
9	16.03
10	15.77
11	13.53
12	15.65
13	16.12
14	11.12
15	10.33
16	15.81
17	15.99
18	14.44
19	16.29
20	17.26
21	16.12
22	16.77
23	15.33
24	11.5
25	16.94
26	15.42
27	16.03
28	16.2
29	13.32
30	15.42

Waktu Proses Untuk Piercing Arm H00

Data Ke-	Waktu (detik)
1	28.33
2	27.69
3	25.31
4	30.36
5	27.26
6	25.66
7	28.88
8	29.56
9	26.32
10	28.08
11	26.19
12	25.35
13	22.1
14	24.96
15	26.5
16	25.62
17	27.56
18	25.72
19	27.16
20	24.92
21	22.02
22	26.42
23	28.12
24	27.18
25	22.92
26	27.52
27	25.26
28	24.32
29	23.63
30	27.38

Waktu Proses Untuk Cutting Arm H00

Data Ke-	Waktu (detik)
1	15.01
2	15.09
3	15.2
4	14.14
5	14.23
6	14.96
7	16.61
8	14.26
9	13.78
10	13.42
11	13.08
12	14.19
13	14.86
14	15.38
15	13.25
16	14.23
17	13.53
18	14.92
19	13.5
20	15.14
21	14.72
22	13.13
23	14.7
24	13.67
25	13.7
26	13.16
27	15.11
28	14.96
29	14.39
30	14.9

Waktu Proses Untuk Assembly 1 H00

Data Ke-	Waktu (detik)
1	104.48
2	105.06
3	99.04
4	106.47
5	116.64
6	109.91
7	113.92
8	105.31
9	111.58
10	115.28
11	116.13
12	108.73
13	109.58
14	110.41
15	114.21
16	107.85
17	113.88
18	116.92
19	105.46
20	113.9
21	109.25
22	112.44
23	102.23
24	104.55
25	110.04
26	107.33
27	104.59
28	100.92
29	112.15
30	103.07

Waktu Proses Untuk Assembly 2

H00

Data Ke-	Waktu (detik)
1	39.89
2	33.44
3	42.04
4	38.66
5	29.27
6	38.92
7	40.71
8	35.46
9	38.74
10	35.11
11	34.19
12	32.94
13	39.62
14	36.86
15	40.71
16	32.44
17	40.62
18	29.91
19	31.14
20	33.47
21	35.64
22	39.73
23	30.19
24	34.5
25	33.61
26	34.48
27	38.66
28	42.23
29	35.37
30	34.41

Waktu Proses Untuk Blank Rod

H00

Data Ke-	Waktu (detik)
1	5.12
2	4.26
3	4.1
4	3.98
5	6.01
6	5.64
7	4.17
8	5.25
9	4.79
10	6.64
11	3.46
12	4.68
13	4.61
14	3.91
15	4.04
16	5.61
17	7.11
18	4.24
19	4.18
20	5.24
21	4.74
22	6.23
23	5.45
24	4.24
25	3.71
26	4.26
27	5.42
28	4.61
29	5.21
30	5.45

Waktu Proses Untuk Piercing Rod H00

Data Ke-	Waktu (detik)
1	13.02
2	12.03
3	15.82
4	11.14
5	14.19
6	9.56
7	13.93
8	15.2
9	14.26
10	13.94
11	14.55
12	16.27
13	13.35
14	14.28
15	16.44
16	13.94
17	17.51
18	13.68
19	12.25
20	14.63
21	13.26
22	14.64
23	16.17
24	14.79
25	15.36
26	13.35
27	12.27
28	13.76
29	15.78
30	14.14

Waktu Proses Untuk Bending Rod H00

Data Ke-	Waktu (detik)
1	17.56
2	15.84
3	17.6
4	15.44
5	13.54
6	16.21
7	17.33
8	17.69
9	16.88
10	14.13
11	18.13
12	17.35
13	17.85
14	15.34
15	13.9
16	14.58
17	15.28
18	11.64
19	14.44
20	14.57
21	15.28
22	13.81
23	14.14
24	16.11
25	14.72
26	14.34
27	13.97
28	14.15
29	11.67
30	12.35

Waktu Proses Untuk Mesin Expand

Data Ke-	Waktu (detik)
1	11.27
2	13.06
3	14.39
4	12.52
5	10.56
6	10.96
7	9.93
8	11.16
9	10.07
10	9.89
11	11.2
12	13.77
13	15.53
14	12.92
15	10.39
16	12.56
17	11.77
18	9.54
19	13.8
20	12.02
21	10.37
22	12.78
23	12.53
24	14.35
25	11.48
26	12.75
27	10.02
28	15.91
29	11.84
30	12.4

Waktu *Handling* Receiving ke Forging

Data Ke-	Waktu (detik)
1	3.13
2	2.73
3	2.57
4	3.18
5	3.22
6	3.28
7	2.19
8	3.12
9	3.5
10	2.35
11	2.94
12	2.13
13	2.91
14	2.74
15	3.67
16	2.94
17	2.35
18	3.55
19	2.22
20	4.02
21	2.12
22	2.25
23	2.86
24	3.28
25	1.46
26	2.54
27	2.88
28	3.19
29	1.96
30	2.17

Waktu *Handling* Forging ke WIP

Data Ke-	Waktu (detik)
1	15.11
2	13.88
3	14.58
4	15.11
5	15.26
6	14.92
7	17.02
8	14.09
9	15.38
10	16.44
11	18.85
12	17.31
13	16.84
14	17.55
15	14.35
16	11.24
17	15.11
18	17.14
19	15.05
20	14.86
21	16.28
22	14.54
23	16.92
24	15.17
25	16.84
26	16.12
27	17.15
28	16.04
29	16.33
30	13.81

Waktu *Handling* Receiving ke Bending (Arm XC)

Data Ke-	Waktu (detik)
1	3.74
2	2.73
3	2.98
4	2.57
5	1.94
6	2.84
7	2.94
8	3.6
9	3.99
10	2.96
11	3.06
12	4.77
13	3.12
14	2.75
15	2.16
16	2.73
17	3
18	2.52
19	3.21
20	4.17
21	3.99
22	3.34
23	4.06
24	2.24
25	2.49
26	3.3
27	1.97
28	3.28
29	2.15
30	2.64

Waktu *Handling* Bending ke Piercing (Arm XC)

Data Ke-	Waktu (detik)
1	4.46
2	3.21
3	4.05
4	3.52
5	4.88
6	2.98
7	3.6
8	3.41
9	4.05
10	3.99
11	2.81
12	3.64
13	3.81
14	4.4
15	3.06
16	3.53
17	4.7
18	4.3
19	2.96
20	3.42
21	3.81
22	4.59
23	4.14
24	5.1
25	4.4
26	4.25
27	3.06
28	3.97
29	2.57
30	4.36

Waktu *Handling* Piercing ke Cutting (Arm XC)

Data Ke-	Waktu (detik)
1	3.82
2	2.97
3	4.01
4	2.47
5	2.78
6	3.74
7	4.17
8	3.17
9	2.07
10	3.97
11	1.77
12	4.5
13	4.52
14	3.12
15	2.75
16	3.13
17	4.55
18	2.16
19	3.08
20	3.31
21	2.53
22	3.9
23	4.19
24	3.21
25	3.46
26	2.73
27	4.02
28	3.16
29	2.38
30	3.98

Waktu *Handling* Cutting ke WIP (Arm XC)

Data Ke-	Waktu (detik)
1	6.11
2	6.04
3	6.52
4	6.84
5	5.8
6	6.75
7	5.97
8	6.44
9	6.75
10	7.02
11	6.83
12	5.29
13	6.76
14	6.93
15	5.97
16	5.94
17	7.2
18	6.12
19	7.02
20	5.57
21	5.04
22	6.46
23	7.13
24	5.59
25	6.44
26	6.57
27	7.06
28	6.84
29	6.87
30	6.35

Waktu *Handling* Receiving ke Blanking (Rod XC)

Data Ke-	Waktu (detik)
1	3.81
2	3.38
3	2.34
4	4.47
5	4.24
6	4.77
7	5.45
8	3.58
9	4.26
10	3.2
11	3.22
12	1.42
13	2.29
14	1.94
15	3.81
16	3.28
17	4.96
18	2.51
19	3.79
20	4.13
21	4.46
22	3.29
23	2.14
24	2.44
25	3.94
26	2.83
27	2.56
28	3.77
29	1.54
30	3.8

Waktu *Handling* Blanking ke Piercing (Rod XC)

Data Ke-	Waktu (detik)
1	3.84
2	3.74
3	3.13
4	4.55
5	3.46
6	2.73
7	3.6
8	3.81
9	3.42
10	2.25
11	2.98
12	1.92
13	3.54
14	2.57
15	4.05
16	1.94
17	2.96
18	3.12
19	3.74
20	2.84
21	2.81
22	3.18
23	3.42
24	2.94
25	4.04
26	3.54
27	3.22
28	2.87
29	3.28
30	2.11

Waktu *Handling* Piercing ke WIP (Rod XC)

Data Ke-	Waktu (detik)
1	12.4
2	10.31
3	11.47
4	13.77
5	10.25
6	12.59
7	13.56
8	11.92
9	11.94
10	12.81
11	13.28
12	12.41
13	13.22
14	12.11
15	11.94
16	11.85
17	12.77
18	12.91
19	13.64
20	11.89
21	11.71
22	13.78
23	12.96
24	13.89
25	11.51
26	9.79
27	11.05
28	12.74
29	11.85
30	11.76

Waktu *Handling* WIP ke Assembly 1 (XC)

Data Ke-	Waktu (detik)
1	11.57
2	10.24
3	12.81
4	11.38
5	11.94
6	10.31
7	12.58
8	10.23
9	12.96
10	11.85
11	11.88
12	12.34
13	11.47
14	12.4
15	11.71
16	9.17
17	11.85
18	10.41
19	12.24
20	12.71
21	10.77
22	11.47
23	12.28
24	10.35
25	10.04
26	12.77
27	10.66
28	12.45
29	11.89
30	11.54

Waktu *Handling* WIP ke Assembly 2 (XC)

Data Ke-	Waktu (detik)
1	18.07
2	17.52
3	16.06
4	17.49
5	19.08
6	15.57
7	18.52
8	17.55
9	16.28
10	17.21
11	16.46
12	16.94
13	18.05
14	16.84
15	16.56
16	16.59
17	19.51
18	17.13
19	16.7
20	17.16
21	18.96
22	16.54
23	16.72
24	17.66
25	17.96
26	18.5
27	17.72
28	18.11
29	16.84
30	16.44

Waktu *Handling* Assembly 1 ke Assembly 2 (XC)

Data Ke-	Waktu (detik)
1	2.19
2	1.92
3	2.22
4	1.92
5	2.57
6	3.12
7	2.2
8	1.59
9	3.2
10	3.5
11	2.35
12	2.15
13	2.04
14	2.35
15	3.55
16	4.02
17	2.94
18	2.13
19	3.15
20	2.55
21	2.82
22	3.56
23	2.91
24	4.11
25	2.74
26	2.92
27	3.35
28	1.85
29	2.7
30	3.06

Waktu *Handling* Assembly 2 ke Expand (XC)

Data Ke-	Waktu (detik)
1	6.55
2	8.11
3	6.44
4	8.42
5	7.31
6	6.84
7	6.28
8	6.13
9	7.15
10	7.02
11	6.41
12	5.74
13	7.4
14	6.54
15	8.08
16	7.31
17	6.72
18	7.44
19	7.66
20	6.93
21	5.88
22	8.56
23	5.32
24	5.19
25	6.35
26	6.1
27	7.96
28	8.5
29	6.62
30	7.72

Waktu *Handling* Expand ke Gudang (XC)

Data Ke-	Waktu (detik)
1	7.05
2	8.85
3	9.54
4	6.16
5	6.59
6	7.44
7	7.36
8	8.66
9	6.97
10	8.64
11	9.1
12	8.71
13	7.57
14	6.18
15	7.28
16	7.27
17	7.13
18	6.66
19	8.42
20	7.08
21	6.56
22	5.14
23	7.72
24	7.13
25	6.7
26	8.67
27	8.7
28	7.16
29	6.11
30	6.96

Waktu *Handling* Receiving ke Bending 1 (Arm H10)

Data Ke-	Waktu (detik)
1	3.12
2	2.07
3	2.77
4	4.62
5	4
6	3.52
7	3.21
8	3.17
9	4.99
10	4.34
11	5.06
12	3.24
13	3.49
14	4.3
15	5.97
16	3.88
17	4.02
18	3.23
19	3.08
20	5.57
21	5.11
22	4.37
23	3.91
24	5.59
25	6.44
26	2.52
27	4.22
28	2.84
29	4.62
30	3.55

Waktu *Handling* Bending 1 ke Bending 2 (Arm H10)

Data Ke-	Waktu (detik)
1	7.62
2	8.67
3	7.26
4	6.24
5	8.67
6	7.31
7	7.5
8	8.04
9	7.05
10	8.28
11	8.1
12	6.93
13	8.72
14	7.46
15	6.91
16	5.23
17	6.48
18	5.19
19	6.42
20	8.81
21	7.96
22	6.97
23	8.15
24	6.67
25	7.35
26	6.64
27	8.44
28	7
29	6.08
30	8.94

Waktu *Handling* Bending 2 ke Piercing (Arm H10)

Data Ke-	Waktu (detik)
1	1.33
2	2.18
3	4.95
4	3.35
5	2.91
6	3.24
7	2.64
8	8.62
9	4.89
10	4.2
11	2.41
12	1.55
13	2.14
14	3.28
15	5.72
16	4.44
17	1.91
18	5.99
19	2.42
20	2.81
21	3.53
22	4.75
23	2.19
24	1.45
25	2.94
26	2.49
27	3.14
28	2.66
29	3.23
30	2.62

Waktu *Handling* Piercing ke Cutting (Arm H10)

Data Ke-	Waktu (detik)
1	2.18
2	1.86
3	2.49
4	2.31
5	2.34
6	2.09
7	2.41
8	1.62
9	2.06
10	2.08
11	2.22
12	2
13	2.35
14	1.79
15	2.69
16	1.84
17	2.3
18	3.22
19	2.54
20	2.68
21	3.14
22	2.98
23	3.13
24	2.01
25	1.8
26	3.01
27	2.07
28	2.77
29	2.84
30	2.31

Waktu *Handling* Cutting ke WIP (Arm H10)

Data Ke-	Waktu (detik)
1	6.61
2	5.28
3	6.75
4	6.04
5	6.05
6	5.88
7	7.54
8	5.38
9	6.77
10	8.48
11	5.64
12	5.93
13	8.23
14	6.92
15	7.34
16	6.12
17	6.92
18	7.44
19	5.39
20	7.42
21	5.4
22	8.59
23	6.82
24	7.68
25	6.7
26	8.25
27	6.98
28	6.24
29	5.81
30	7.24

Waktu *Handling* Receiving ke Blanking (Rod H10)

Data Ke-	Waktu (detik)
1	3.86
2	3.28
3	4.93
4	2.41
5	3.46
6	3.54
7	4.52
8	3.07
9	5.29
10	2.94
11	1.96
12	3.69
13	5
14	4.31
15	5.5
16	3.36
17	2.94
18	3.47
19	2.62
20	3.4
21	2.54
22	4.22
23	3.95
24	3.81
25	5.42
26	2.61
27	4.35
28	5.66
29	3.95
30	3.3

Waktu *Handling* Blanking ke Piercing (Rod H10)

Data Ke-	Waktu (detik)
1	2.34
2	1.94
3	3.79
4	2.14
5	2.44
6	1.54
7	3.82
8	2.78
9	3.17
10	3.12
11	3.08
12	3.21
13	3.98
14	2.73
15	1.94
16	3.99
17	3
18	2.24
19	3.28
20	4.01
21	1.91
22	2.23
23	3.42
24	4.19
25	2.66
26	2.17
27	2.9
28	3.28
29	2.54
30	2.35

Waktu *Handling* Piercing ke Bending (Rod H10)

Data Ke-	Waktu (detik)
1	1.11
2	2.04
3	2.65
4	2.75
5	3.17
6	1.49
7	3.37
8	2.65
9	2.35
10	4.69
11	3.64
12	3.42
13	3.42
14	2.72
15	3.7
16	2.9
17	2.25
18	3.81
19	2.31
20	2.61
21	3.42
22	3.06
23	2.82
24	2.98
25	4.72
26	2.39
27	2.98
28	1.97
29	4.38
30	3.16

Waktu *Handling* Bending ke WIP (Rod H10)

Data Ke-	Waktu (detik)
1	6.28
2	6.79
3	6.52
4	7.2
5	5.8
6	6.75
7	6.04
8	7.4
9	7.11
10	7.13
11	6.46
12	5.29
13	7.14
14	7.44
15	6.94
16	8.83
17	7.31
18	6.12
19	8.92
20	7.42
21	8.12
22	6.79
23	7.46
24	8.05
25	6.95
26	6.64
27	7.19
28	6.84
29	7.74
30	6.56

Waktu *Handling* WIP ke Assembly 1 (H10)

Data Ke-	Waktu (detik)
1	11.1
2	9.96
3	10.77
4	8.25
5	11.98
6	10.45
7	11.85
8	13.02
9	12.46
10	9.2
11	11.85
12	13.2
13	11.5
14	13.25
15	10.11
16	10.41
17	13.55
18	12.79
19	12.24
20	10.85
21	11.88
22	14.64
23	9.04
24	14.91
25	12
26	12.71
27	14.52
28	11.07
29	13.63
30	12.34

Waktu *Handling* WIP ke Assembly 2 (H10)

Data Ke-	Waktu (detik)
1	15.88
2	14.88
3	15.04
4	14.35
5	14.64
6	14.58
7	14.05
8	15.52
9	14.91
10	16.13
11	14.86
12	14.54
13	14.52
14	15.07
15	15.29
16	13.64
17	13.78
18	15.96
19	14.55
20	14.05
21	14.04
22	15.99
23	14.23
24	13.87
25	14.17
26	14.61
27	15.5
28	16.04
29	15.78
30	16.05

Waktu *Handling* Assembly 1 ke Assembly 2 (H10)

Data Ke-	Waktu (detik)
1	5.43
2	4.86
3	7.42
4	5.19
5	4.66
6	5.67
7	4.87
8	5.39
9	5.74
10	5.88
11	4.64
12	5.93
13	3.92
14	5.39
15	4.82
16	6.7
17	6.24
18	5.81
19	4.24
20	6.55
21	6.57
22	3.24
23	6.46
24	4.07
25	5.46
26	7.11
27	5.29
28	4.94
29	5.79
30	6.64

Waktu *Handling* WIP Assembly 2 ke Expand (H10)

Data Ke-	Waktu (detik)
1	8.64
2	8.82
3	7.55
4	6.04
5	8.1
6	9.88
7	12.17
8	7.4
9	10.92
10	8.48
11	7.86
12	7.43
13	8.86
14	9.42
15	10.19
16	6.66
17	8.67
18	11.87
19	6.39
20	7.74
21	10.73
22	11.54
23	12.4
24	12.96
25	10.25
26	7.28
27	8.27
28	9.48
29	11.77
30	12.7

Waktu *Handling* Expand ke Gudang (H10)

Data Ke-	Waktu (detik)
1	6.55
2	8.11
3	6.44
4	8.42
5	7.31
6	6.84
7	6.28
8	6.13
9	7.15
10	7.02
11	6.41
12	5.74
13	7.4
14	6.54
15	8.08
16	7.31
17	6.72
18	7.44
19	7.66
20	6.93
21	5.88
22	8.56
23	5.32
24	5.19
25	6.35
26	6.1
27	7.96
28	8.5
29	6.62
30	7.72

Waktu *Handling* Receiving ke Bending 1 (Arm H00)

Data Ke-	Waktu (detik)
1	3.12
2	2.07
3	2.77
4	4.62
5	4
6	3.52
7	3.21
8	3.17
9	4.99
10	4.34
11	5.06
12	3.24
13	3.49
14	4.3
15	5.97
16	3.88
17	4.02
18	3.23
19	3.08
20	5.57
21	5.11
22	4.37
23	3.91
24	5.59
25	6.44
26	2.52
27	4.22
28	2.84
29	4.62
30	3.55

Waktu *Handling* Bending 1 ke Bending 2 (Arm H00)

Data Ke-	Waktu (detik)
1	4.19
2	5.66
3	6.17
4	3.76
5	4.53
6	5.99
7	4.98
8	5.47
9	6.15
10	4.23
11	3.26
12	6.93
13	5.54
14	6.55
15	4.72
16	6.96
17	6.28
18	3.87
19	7.43
20	8.63
21	5.33
22	4.17
23	3.55
24	4.91
25	5.04
26	2.76
27	3.52
28	4.61
29	3.44
30	5.11

Waktu *Handling* Bending 2 ke Piercing (Arm H00)

Data Ke-	Waktu (detik)
1	8.5
2	11.6
3	8.74
4	6.02
5	8.08
6	10.44
7	7.46
8	8.63
9	11.3
10	9
11	10.15
12	10.62
13	9.86
14	8.71
15	11.44
16	8.62
17	9.91
18	7.14
19	8.47
20	9.64
21	9.73
22	10.19
23	7.25
24	11.63
25	8.26
26	9.64
27	8.17
28	9.18
29	10.92
30	8.52

Waktu *Handling* Piercing ke Cutting (Arm H00)

Data Ke-	Waktu (detik)
1	2.82
2	4.59
3	3.15
4	2.53
5	3.97
6	1.96
7	2.94
8	3.17
9	3.6
10	2.76
11	2.22
12	4.97
13	2.94
14	2.07
15	3.78
16	2.3
17	3.47
18	4.04
19	2.16
20	3.94
21	1.66
22	2.64
23	4.56
24	2.63
25	4.26
26	3.84
27	3.71
28	2.67
29	2.7
30	3.69

Waktu *Handling* Cutting ke WIP (Arm H00)

Data Ke-	Waktu (detik)
1	5.5
2	6.54
3	7.33
4	6.63
5	6.15
6	7.22
7	6.54
8	8.01
9	6.54
10	6.04
11	8.38
12	6.17
13	6.58
14	7.82
15	6.04
16	8.1
17	5.78
18	5.08
19	7.81
20	5.39
21	6.82
22	7.15
23	8.48
24	7.05
25	7.36
26	6.97
27	7.08
28	6.56
29	6.11
30	8.5

Waktu *Handling* Receiving ke Blanking (Rod H00)

Data Ke-	Waktu (detik)
1	3.86
2	3.28
3	4.93
4	2.41
5	3.46
6	3.54
7	4.52
8	3.07
9	5.29
10	2.94
11	1.96
12	3.69
13	5
14	4.31
15	5.5
16	3.36
17	2.94
18	3.47
19	2.62
20	3.4
21	2.54
22	4.22
23	3.95
24	3.81
25	5.42
26	2.61
27	4.35
28	5.66
29	3.95
30	3.3

Waktu *Handling* Blanking ke Piercing (Rod H00)

Data Ke-	Waktu (detik)
1	2.34
2	1.94
3	3.79
4	2.14
5	2.44
6	1.54
7	3.82
8	2.78
9	3.17
10	3.12
11	3.08
12	3.21
13	3.98
14	2.73
15	1.94
16	3.99
17	3
18	2.24
19	3.28
20	4.01
21	1.91
22	2.23
23	3.42
24	4.19
25	2.66
26	2.17
27	2.9
28	3.28
29	2.54
30	2.35

Waktu *Handling* Piercing ke Bending (Rod H00)

Data Ke-	Waktu (detik)
1	1.11
2	2.04
3	2.65
4	2.75
5	3.17
6	1.49
7	3.37
8	2.65
9	2.35
10	4.69
11	3.64
12	3.42
13	3.42
14	2.72
15	3.7
16	2.9
17	2.25
18	3.81
19	2.31
20	2.61
21	3.42
22	3.06
23	2.82
24	2.98
25	4.72
26	2.39
27	2.98
28	1.97
29	4.38
30	3.16

Waktu *Handling* Bending ke WIP (Rod H00)

Data Ke-	Waktu (detik)
1	6.28
2	6.79
3	6.52
4	7.2
5	5.8
6	6.75
7	6.04
8	7.4
9	7.11
10	7.13
11	6.46
12	5.29
13	7.14
14	7.44
15	6.94
16	8.83
17	7.31
18	6.12
19	8.92
20	7.42
21	8.12
22	6.79
23	7.46
24	8.05
25	6.95
26	6.64
27	7.19
28	6.84
29	7.74
30	6.56

Waktu *Handling* WIP ke Assembly 1 (H00)

Data Ke-	Waktu (detik)
1	6.44
2	5.11
3	7.08
4	4.58
5	5.07
6	6.14
7	7.24
8	5.17
9	7.13
10	9.84
11	5.18
12	6.02
13	8.85
14	5.32
15	4.88
16	6.16
17	5.26
18	8.85
19	6.92
20	7.55
21	5.7
22	6.86
23	9.14
24	7.71
25	5.32
26	6.47
27	5.11
28	6.39
29	9.12
30	7.44

Waktu *Handling* WIP ke Assembly 2 (H00)

Data Ke-	Waktu (detik)
1	10.77
2	14.22
3	10.19
4	8.98
5	11.6
6	10.44
7	11.63
8	14.58
9	15.32
10	11.88
11	12.38
12	13.68
13	13.97
14	12.16
15	13.14
16	12.82
17	13.97
18	11.96
19	12.76
20	12.3
21	14.56
22	13.84
23	11.19
24	10.98
25	8.63
26	11.17
27	13.44
28	11.98
29	11.85
30	13.2

Waktu *Handling* Assembly 1 ke Assembly 2 (H10)

Data Ke-	Waktu (detik)
1	1.88
2	3.31
3	2.98
4	2.14
5	4.21
6	3.37
7	2.38
8	3.44
9	2.92
10	3.11
11	2.22
12	4.52
13	2.61
14	2.54
15	3.68
16	3.17
17	2.45
18	2.74
19	4.11
20	3.55
21	1.91
22	3.97
23	4.22
24	2.3
25	2.16
26	3.37
27	2.65
28	2.47
29	3.14
30	2.84

Waktu *Handling* WIP Assembly 2 ke Expand (H10)

Data Ke-	Waktu (detik)
1	12.55
2	12.59
3	10.14
4	11.27
5	13.31
6	12.46
7	11.7
8	10.13
9	12.98
10	11.34
11	11.94
12	9.11
13	10.26
14	14.92
15	12.02
16	14.09
17	11.38
18	13.44
19	13.85
20	11.31
21	10.84
22	9.55
23	10.35
24	11.24
25	15.11
26	12.14
27	10.05
28	11.38
29	10.78
30	10.22

Waktu *Handling* Expand ke Gudang (H10)

Data Ke-	Waktu (detik)
1	6.55
2	8.11
3	6.44
4	8.42
5	7.31
6	6.84
7	6.28
8	6.13
9	7.15
10	7.02
11	6.41
12	5.74
13	7.4
14	6.54
15	8.08
16	7.31
17	6.72
18	7.44
19	7.66
20	6.93
21	5.88
22	8.56
23	5.32
24	5.19
25	6.35
26	6.1
27	7.96
28	8.5
29	6.62
30	7.72

LAMPIRAN 2

- **CONTOH HASIL PENGUJIAN STAT FIT UNTUK *BENDING ARM BRAKE PEDAL* XC**

HASIL PENGUJIAN STAT FIT UNTUK *BENDING ARM BRAKE PEDAL* XC

Auto::Fit Distributions

distribution	rank	acceptance
Weibull(0, 16, 24.3)	99.2	accept
Lognormal(0, 3.16, 0.0714)	86.7	accept
Pearson 5(0, 195, 4.57e+03)	85.2	accept
Beta(0, 26.3, 16.8, 2.07)	63.7	accept
Triangular(0, 27, 26.1)	0	reject
Uniform(0, 26.3)	0	reject

Weibull

minimum	=	0 [fixed]
alpha	=	15.9711
beta	=	24.2894

Chi Squared

total classes	4
interval type	equal probable
net bins	4
chi**2	1.2
degrees of freedom	3
alpha	0.05
chi**2(3,0.05)	7.81
p-value	0.753
result	DO NOT REJECT

Kolmogorov-Smirnov

data points	30
ks stat	0.103
alpha	0.05
ks stat(30,0.05)	0.242
p-value	0.875
result	DO NOT REJECT

Anderson-Darling

data points	30
ad stat	0.396
alpha	0.05
ad stat(0.05)	2.49
p-value	0.853
result	DO NOT REJECT

LAMPIRAN 3

- **TABEL UJI SEBARAN T**

TABEL UJI SEBARAN T

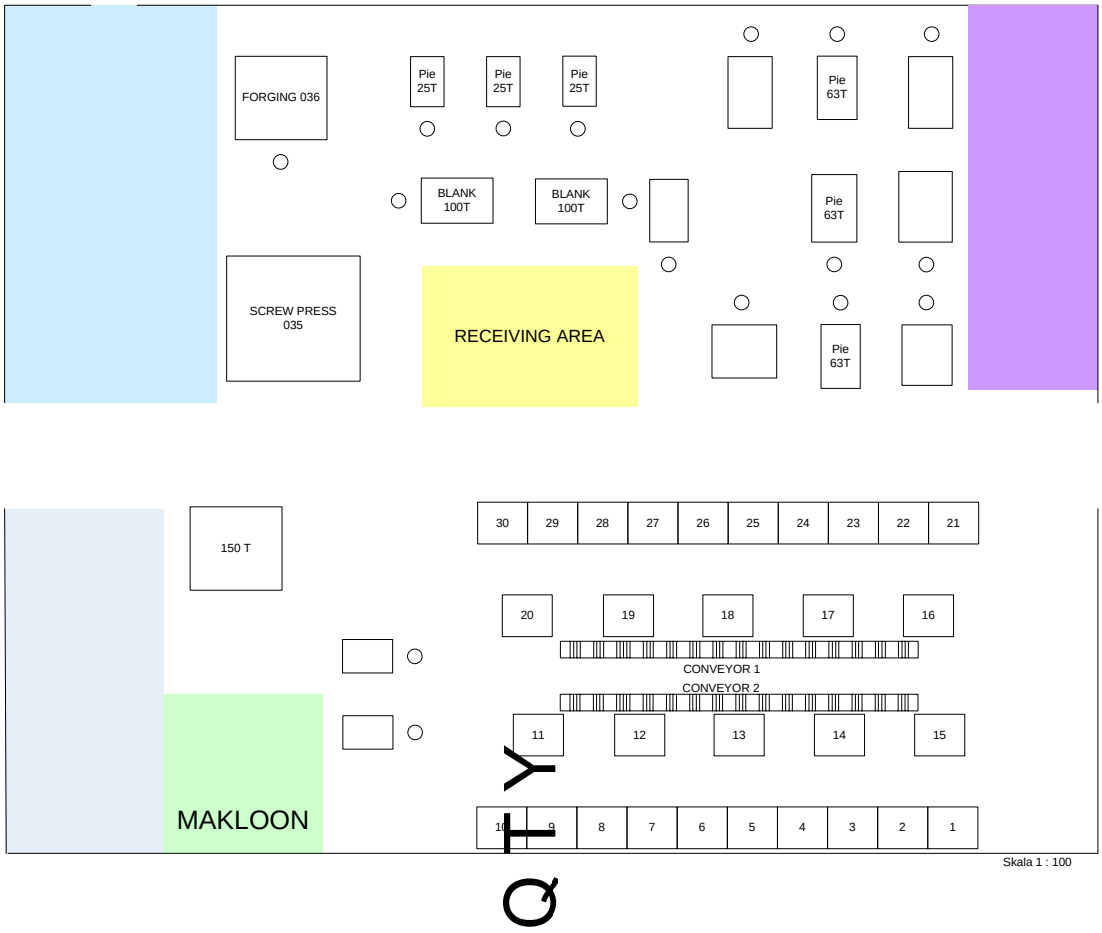
TABEL II
NILAI-NILAI DALAM DISTRIBUSI t

	α untuk uji dua fihak (two tail test)					
	0,50	0,20	0,10	0,05	0,02	0,01
	α untuk uji satu fihak (one tail test)					
dk	0,25	0,10	0,05	0,025	0,01	0,005
1	1,000	3,078	6,314	12,706	31,821	63,657
2	0,816	1,886	2,920	4,303	6,965	9,925
3	0,765	1,638	2,353	3,182	4,541	5,841
4	0,741	1,533	2,132	2,776	3,747	4,604
5	0,727	1,476	2,015	2,571	3,365	4,032
6	0,718	1,440	1,943	2,447	3,143	3,707
7	0,711	1,415	1,895	2,365	2,998	3,499
8	0,706	1,397	1,860	2,306	2,896	3,355
9	0,703	1,383	1,833	2,262	2,821	3,250
10	0,700	1,372	1,812	2,228	2,764	3,169
11	0,697	1,363	1,796	2,201	2,718	3,106
12	0,695	1,356	1,782	2,179	2,681	3,055
13	0,692	1,350	1,771	2,160	2,650	3,012
14	0,691	1,345	1,761	2,145	2,624	2,977
15	0,690	1,341	1,753	2,131	2,602	2,947
16	0,689	1,337	1,746	2,120	2,583	2,921
17	0,688	1,333	1,740	2,110	2,567	2,898
18	0,688	1,330	1,734	2,101	2,552	2,878
19	0,687	1,328	1,729	2,093	2,539	2,861
20	0,687	1,325	1,725	2,086	2,528	2,845
21	0,686	1,323	1,721	2,080	2,518	2,831
22	0,686	1,321	1,717	2,074	2,508	2,819
23	0,685	1,319	1,714	2,069	2,500	2,807
24	0,685	1,318	1,711	2,064	2,492	2,797
25	0,684	1,316	1,708	2,060	2,485	2,787
26	0,684	1,315	1,706	2,056	2,479	2,779
27	0,684	1,314	1,703	2,052	2,473	2,771
28	0,683	1,313	1,701	2,048	2,467	2,763
29	0,683	1,311	1,699	2,045	2,462	2,756
30	0,683	1,310	1,697	2,042	2,457	2,750
40	0,681	1,303	1,684	2,021	2,423	2,704
60	0,679	1,296	1,671	2,000	2,390	2,660
120	0,677	1,289	1,658	1,980	2,358	2,617
∞	0,674	1,282	1,645	1,960	2,326	2,576

LAMPIRAN 4

- **LAYOUT LANTAI PRODUKSI**

LAYOUT LANTAI PRODUKSI



QTY

KETING

Expand 25T

LAMPIRAN 5

- **INPUT SIMULASI AKTUAL**
- **OUTPUT SIMULASI AKTUAL**

INPUT SIMULASI AKTUAL

```
*******************************************************************************
*                                                                             *
*                        Formatted Listing of Model:                          *
*                  D:\Lina's Document\TA\Aktual.MOD                           *
*                                                                             *
*******************************************************************************

  Time Units:                       Minutes
  Distance Units:                   Feet
  Initialization Logic:


*******************************************************************************
*                                 Locations                                   *
*******************************************************************************

  Name           Cap Units Stats       Rules           Cost
  -------------- --- ----- ----------- --------------- ------------
  Ms_Forging     1   1     Time Series Oldest, ,
  Ms_Blank1      1   1     Time Series Oldest, ,
  Ms_Pie25_1     2   1     Time Series Oldest, ,
  Ms_Hyd         2   1     Time Series Oldest, ,
  Ms_Pie63_1     2   1     Time Series Oldest, ,
  Ms_Cut90_1     1   1     Time Series Oldest, ,
  Ms_Blank2      1   1     Time Series Oldest, ,
  Ms_Pie25_2     2   1     Time Series Oldest, ,
  Ms_Pie25_3     2   1     Time Series Oldest, ,
  Ms_Bend35      2   1     Time Series Oldest, ,
  Ms_Bend35_2    2   1     Time Series Oldest, ,
  Ms_Bend100     1   1     Time Series Oldest, ,
  Ms_Pie63_3     2   1     Time Series Oldest, ,
  Ms_Cut100      1   1     Time Series Oldest, ,
  Ms_Pie63_2     2   1     Time Series Oldest, ,
  Ms_Cut90_2     1   1     Time Series Oldest, ,
  Assy1_XC       1   3     Time Series Oldest, , First
  Assy1_XC.1     1   1     Time Series Oldest, ,
  Assy1_XC.2     1   1     Time Series Oldest, ,
  Assy1_XC.3     1   1     Time Series Oldest, ,
  Assy1_H10      1   3     Time Series Oldest, , First
  Assy1_H10.1    1   1     Time Series Oldest, ,
  Assy1_H10.2    1   1     Time Series Oldest, ,
  Assy1_H10.3    1   1     Time Series Oldest, ,
  Assy1_H00      1   3     Time Series Oldest, , First
```

```
Assy1_H00.1    1   1     Time Series Oldest, ,
Assy1_H00.2    1   1     Time Series Oldest, ,
Assy1_H00.3    1   1     Time Series Oldest, ,
Assy2_XC       1   1     Time Series Oldest, ,
Assy2_H10      1   1     Time Series Oldest, ,
Assy2_H00      1   1     Time Series Oldest, ,
Ms_Expand      1   1     Time Series Oldest, ,
Receiving_Area INF 1     Time Series Oldest, ,
WIP            INF 1     Time Series Oldest, ,
in_forging     INF 1     Time Series Oldest, ,
in_blank1      INF 1     Time Series Oldest, ,
in_blank2      INF 1     Time Series Oldest, ,
in_pie25_1     INF 1     Time Series Oldest, ,
in_pie25_2     INF 1     Time Series Oldest, ,
in_pie25_3     INF 1     Time Series Oldest, ,
in_Hyd         INF 1     Time Series Oldest, ,
in_bend35      INF 1     Time Series Oldest, ,
in_bend100     INF 1     Time Series Oldest, ,
in_cut100      INF 1     Time Series Oldest, ,
in_cut90_1     INF 1     Time Series Oldest, ,
in_cut90_2     INF 1     Time Series Oldest, ,
in_pie63_1     INF 1     Time Series Oldest, ,
in_pie63_2     INF 1     Time Series Oldest, ,
in_pie63_3     INF 1     Time Series Oldest, ,
in_Arm_XC      INF 1     Time Series Oldest, ,
in_Rod_XC      INF 1     Time Series Oldest, ,
in_Boss_XC     INF 1     Time Series Oldest, ,
in_Shoe_XC     INF 1     Time Series Oldest, ,
in_Arm_H10     INF 1     Time Series Oldest, ,
in_Rod_H10     INF 1     Time Series Oldest, ,
in_Boss_H10    INF 1     Time Series Oldest, ,
in_Shoe_H10    INF 1     Time Series Oldest, ,
in_Arm_H00     INF 1     Time Series Oldest, ,
in_Rod_H00     INF 1     Time Series Oldest, ,
in_Boss_H00    INF 1     Time Series Oldest, ,
in_Shoe_H00    INF 1     Time Series Oldest, ,
in_switch_XC   INF 1     Time Series Oldest, ,
in_spring_XC   INF 1     Time Series Oldest, ,
in_Pedal_XC    INF 1     Time Series Oldest, ,
in_switch_H10  INF 1     Time Series Oldest, ,
in_spring_H10  INF 1     Time Series Oldest, ,
in_Pedal_H10   INF 1     Time Series Oldest, ,
in_switch_H00  INF 1     Time Series Oldest, ,
in_spring_H00  INF 1     Time Series Oldest, ,
in_Pedal_H00   INF 1     Time Series Oldest, ,
in_expand      INF 1     Time Series Oldest, ,
out_forging    INF 1     Time Series Oldest, ,
out_blank1     INF 1     Time Series Oldest, ,
out_blank2     INF 1     Time Series Oldest, ,
```

```
  out_pie25_1    INF 1     Time Series Oldest, ,
  out_pie25_2    INF 1     Time Series Oldest, ,
  out_pie25_3    INF 1     Time Series Oldest, ,
  out_Hyd        INF 1     Time Series Oldest, ,
  out_bend35     INF 1     Time Series Oldest, ,
  out_bend100    INF 1     Time Series Oldest, ,
  out_cut100     INF 1     Time Series Oldest, ,
  out_pie63_1    INF 1     Time Series Oldest, ,
  out_pie63_2    INF 1     Time Series Oldest, ,
  out_pie63_3    INF 1     Time Series Oldest, ,
  out_cut90_1    INF 1     Time Series Oldest, ,
  out_cut90_2    INF 1     Time Series Oldest, ,
  out_assy1_XC   INF 1     Time Series Oldest, ,
  out_assy1_H10  INF 1     Time Series Oldest, ,
  out_assy1_H00  INF 1     Time Series Oldest, ,
  out_assy2_XC   INF 1     Time Series Oldest, ,
  out_assy2_H10  INF 1     Time Series Oldest, ,
  out_assy2_H00  INF 1     Time Series Oldest, ,
  out_expand     INF 1     Time Series Oldest, ,
  Shipping_XC    INF 1     Time Series Oldest, ,
  Shipping_H10   INF 1     Time Series Oldest, ,
  Shipping_H00   INF 1     Time Series Oldest, ,
  Shipping       1   1     Time Series Oldest, ,

*****************************************************************************
*                                  Entities                                 *
*****************************************************************************

  Name            Speed (fpm)  Stats       Cost
  --------------- ------------ ----------- ------------
  Boss            150          Time Series
  Brake_shoe      150          Time Series
  Arm_XC          150          Time Series
  Rod_XC          150          Time Series
  Switch_XC       150          Time Series
  Spring_XC       150          Time Series
  Pedal_XC        150          Time Series
  Box_Arm_XC      150          Time Series
  Box_Rod_XC      150          Time Series
  Box_Switch_XC   150          Time Series
  Box_Spring_XC   150          Time Series
  Box_Boss        150          Time Series
  Box_Shoe        150          Time Series
  Box_Arm_H10     150          Time Series
  Box_Rod_H10     150          Time Series
  Box_Switch_H10  150          Time Series
  Box_Spring_H10  150          Time Series
  Box_Arm_H00     150          Time Series
```

Box_Rod_H00	150	Time Series
Box_Switch_H00	150	Time Series
Box_Spring_H00	150	Time Series
Arm_H10	150	Time Series
Rod_H10	150	Time Series
Switch_H10	150	Time Series
Spring_H10	150	Time Series
Pedal_H10	150	Time Series
Arm_H00	150	Time Series
Rod_H00	150	Time Series
Switch_H00	150	Time Series
Spring_H00	150	Time Series
Pedal_H00	150	Time Series
Box_Pedal_XC	150	Time Series
Box_Pedal_H10	150	Time Series
Box_Pedal_H00	150	Time Series
Brake_pedal_XC	150	Time Series
Brake_pedal_H10	150	Time Series
Brake_pedal_H00	150	Time Series
pengiriman	150	Time Series

****
*
Path Networks
*
****

Name	Type	T/S	From	To	BI	Dist/Time	Speed Factor
WIP_to_assy1_XC	Passing	Time	N1	N2	Bi	W(14.9, 12) sec	
WIP_to_assy1_H10	Passing	Time	N1	N2	Bi	W(8.21, 12.6) sec	
WIP_to_assy1_H00	Passing	Time	N1	N2	Bi	W(4.8, 7.19) sec	
Forg_to_WIP	Passing	Time	N1	N2	Bi	W(12, 16.3) sec	
assy2_XC_to_exp	Passing	Time	N1	N2	Bi	W(8.56, 7.35) sec	
assy2_H10_to_exp	Passing	Time	N1	N2	Bi	W(5.21, 10.2) sec	
assy2_H00_to_exp	Passing	Time	N1	N2	Bi	W(7.92, 12.4) sec	
WIP_to_assy2_XC	Passing	Time	N1	N2	Bi	W(18.4, 17.8) sec	
WIP_to_assy2_H10	Passing	Time	N1	N2	Bi	W(21.1, 15.3) sec	
WIP_to_assy2_H00	Passing	Time	N1	N2	Bi	W(8.95, 13) sec	
Pie25_1_to_WIP	Passing	Time	N1	N2	Bi	W(14, 12.7) sec	
exp_to_Gd	Passing	Time	N1	N2	Bi	W(7.85, 7.9) sec	
pie25_2_to_WIP	Passing	Time	N1	N2	Bi	W(8.98, 7.4) sec	
bend35_to_blank	Passing	Time	N1	N2	Bi	W(4.03, 5.64) sec	
blank_to_pie63_2	Passing	Time	N1	N2	Bi	W(7.52, 9.86) sec	

```
*****************************************************************************
*                              Interfaces                                   *
*****************************************************************************

  Net              Node       Location
  ---------------- ---------- -------------
  WIP_to_assy1_XC  N1         WIP
                   N2         in_Arm_XC
                   N2         in_Rod_XC
                   N2         in_Boss_XC
                   N2         in_Shoe_XC
  WIP_to_assy1_H10 N1         WIP
                   N2         in_Arm_H10
                   N2         in_Rod_H10
                   N2         in_Boss_H10
                   N2         in_Shoe_H10
  WIP_to_assy1_H00 N1         WIP
                   N2         in_Arm_H00
                   N2         in_Rod_H00
                   N2         in_Boss_H00
                   N2         in_Shoe_H00
  Forg_to_WIP      N1         out_forging
                   N2         WIP
  assy2_XC_to_exp  N1         out_assy2_XC
                   N2         in_expand
  assy2_H10_to_exp N1         out_assy2_H10
                   N2         in_expand
  assy2_H00_to_exp N1         out_assy2_H00
                   N2         in_expand
  WIP_to_assy2_XC  N1         WIP
                   N2         in_switch_XC
                   N2         in_spring_XC
                   N2         in_Pedal_XC
  WIP_to_assy2_H10 N1         WIP
                   N2         in_switch_H10
                   N2         in_spring_H10
                   N2         in_Pedal_H10
  WIP_to_assy2_H00 N1         WIP
                   N2         in_switch_H00
                   N2         in_spring_H00
                   N2         in_Pedal_H00
  Pie25_1_to_WIP   N1         out_pie25_1
                   N2         WIP
  exp_to_Gd        N1         out_expand
                   N2         Shipping_XC
                   N2         Shipping_H10
                   N2         Shipping_H00
  pie25_2_to_WIP   N1         out_pie25_2
                   N2         WIP
```

```
  bend35_to_blank  N1         out_bend35
                   N2         in_blank2
  blank_to_pie63_2 N1         out_blank2
                   N2         in_pie63_2
```

```
*******************************************************************************
*                                Processing                                   *
*******************************************************************************
```

		Process			Routing		
Entity	Location	Operation	Blk	Output	Destination	Rule	Move Logic
Brake_shoe	Receiving_Area	GROUP 50 AS Box_Shoe					
Box_Shoe	Receiving_Area		1	Box_Shoe	in_forging	FIRST 1	MOVE FOR W(5.46, 3.01) SEC
Box_Shoe	in_forging	UNGROUP RENAME Brake_shoe					
Brake_shoe	in_forging		1	Brake_shoe	Ms_Forging	FIRST 1	
Brake_shoe	Ms_Forging	WAIT W(5.9, 6.33) SEC					
			1	Brake_shoe	out_forging	FIRST 1	GRAPHIC 2
Brake_shoe	out_forging	GROUP 50 AS Box_Shoe					
Box_Shoe	out_forging		1	Box_Shoe	WIP	FIRST 1	MOVE ON Forg_to_WIP
Brake_shoe	WIP	GROUP 50 AS Box_Shoe					
Box_Shoe	WIP		1	Box_Shoe	in_Shoe_XC	MOST 1	MOVE ON WIP_to_assy1_XC
				Box_Shoe	in_Shoe_H10	MOST	MOVE ON WIP_to_assy1_H10
				Box_Shoe	in_Shoe_H00	MOST	MOVE ON WIP_to_assy1_H00
Box_Shoe	in_Shoe_XC	UNGROUP RENAME Brake_shoe GRAPHIC 2					
Brake_shoe	in_Shoe_XC		1	Brake_shoe	Assy1_XC	JOIN 1	
Box_Shoe	in_Shoe_H10	UNGROUP RENAME Brake_shoe GRAPHIC 2					
Brake_shoe	in_Shoe_H10		1	Brake_shoe	Assy1_H10	JOIN 1	
Box_Shoe	in_Shoe_H00	UNGROUP RENAME Brake_shoe GRAPHIC 2					

```
Brake_shoe      in_Shoe_H00                          1    Brake_shoe      Assy1_H00     JOIN 1
Boss            WIP           GROUP 30 AS Box_Boss
Box_Boss        WIP                                  1    Box_Boss        in_Boss_XC    TURN 1   MOVE ON WIP_to_assy1_XC
                                                          Box_Boss        in_Boss_H10   TURN     MOVE ON WIP_to_assy1_H10
                                                          Box_Boss        in_Boss_H00   TURN     MOVE ON WIP_to_assy1_H00
Box_Boss        in_Boss_XC    UNGROUP
                              RENAME Boss
Boss            in_Boss_XC                           1    Boss            Assy1_XC      JOIN 1
Box_Boss        in_Boss_H10   UNGROUP
                              RENAME Boss
Boss            in_Boss_H10                          1    Boss            Assy1_H10     JOIN 1
Box_Boss        in_Boss_H00   UNGROUP
                              RENAME Boss
Boss            in_Boss_H00                          1    Boss            Assy1_H00     JOIN 1
Switch_XC       WIP           GROUP 50 AS Box_Switch_XC
Box_Switch_XC   WIP                                  1    Box_Switch_XC   in_switch_XC  FIRST 1  MOVE ON WIP_to_assy2_XC
Box_Switch_XC   in_switch_XC  UNGROUP
                              RENAME Switch_XC
Switch_XC       in_switch_XC                         1    Switch_XC       Assy2_XC      JOIN 1
Spring_XC       WIP           GROUP 50 AS Box_Spring_XC
Box_Spring_XC   WIP                                  1    Box_Spring_XC   in_spring_XC  FIRST 1  MOVE ON WIP_to_assy2_XC
Box_Spring_XC   in_spring_XC  UNGROUP
                              RENAME Spring_XC
Spring_XC       in_spring_XC                         1    Spring_XC       Assy2_XC      JOIN 1
Rod_XC          Receiving_Area GROUP 50 AS Box_Rod_XC
Box_Rod_XC      Receiving_Area                       1    Box_Rod_XC      in_blank1     FIRST 1  MOVE FOR W(3.85, 3.75) SEC
Box_Rod_XC      in_blank1     UNGROUP
                              RENAME Rod_XC
Rod_XC          in_blank1                            1    Rod_XC          Ms_Blank1     FIRST 1
Rod_XC          Ms_Blank1     WAIT W(3.68, 4.16) SEC
                                                     1    Rod_XC          out_blank1    FIRST 1  GRAPHIC 2
Rod_XC          out_blank1    GROUP 50 AS Box_Rod_XC
Box_Rod_XC      out_blank1                           1    Box_Rod_XC      in_pie25_1    FIRST 1  MOVE FOR W(5.83, 3.44) SEC
```

```
Box_Rod_XC      in_pie25_1      UNGROUP
                                RENAME Rod_XC
                                GRAPHIC 2

Rod_XC          in_pie25_1                          1    Rod_XC          Ms_Pie25_1    FIRST 1

Rod_XC          Ms_Pie25_1      WAIT W(8.97, 16.5) SEC
                                                    1    Rod_XC          out_pie25_1   FIRST 1  GRAPHIC 3

Rod_XC          out_pie25_1     GROUP 50 AS Box_Rod_XC
Box_Rod_XC      out_pie25_1                         1    Box_Rod_XC      WIP           FIRST 1  MOVE ON Pie25_1_to_WIP

Rod_XC          WIP             GROUP 50 AS Box_Rod_XC
Box_Rod_XC      WIP                                 1    Box_Rod_XC      in_Rod_XC     FIRST 1  MOVE ON WIP_to_assy1_XC
Box_Rod_XC      in_Rod_XC       UNGROUP
                                RENAME Rod_XC
                                GRAPHIC 3

Rod_XC          in_Rod_XC                           1    Rod_XC          Assy1_XC      JOIN 1
Arm_XC          Receiving_Area  GROUP 30 AS Box_Arm_XC

Box_Arm_XC      Receiving_Area                      1    Box_Arm_XC      in_Hyd        FIRST 1  MOVE FOR W(4.67, 3.32) SEC

Box_Arm_XC      in_Hyd          UNGROUP
                                RENAME Arm_XC

Arm_XC          in_Hyd          INC hyd
                                                    1    Arm_XC          Ms_Hyd        FIRST 1  DEC hyd

Arm_XC          Ms_Hyd          WAIT W(16, 24.3) SEC
                                IF jml_arm_XC < 1320 AND ruleroute_XC = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_XC = 0
                                 ROUTE 2
                                }
                                                    1    Arm_XC          out_Hyd       FIRST 1  GRAPHIC 2


                                                    2    Arm_XC          out_Hyd       SEND 1   GRAPHIC 2
```

```
Arm_XC          out_Hyd         GROUP 30 AS Box_Arm_XC

Box_Arm_XC      out_Hyd                         1    Box_Arm_XC      in_pie63_1    FIRST 1  MOVE FOR W(6.8, 4.11) SEC


Box_Arm_XC      in_pie63_1      UNGROUP
                                RENAME Arm_XC
                                GRAPHIC 2

Arm_XC          in_pie63_1      INC in_63_1
                                                1    Arm_XC          Ms_Pie63_1    FIRST 1  DEC in_63_1

Arm_XC          Ms_Pie63_1      WAIT W(23, 25.4) SEC
                                IF jml_arm_XC < 1320 AND ruleroute_XC = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_XC = 0
                                 ROUTE 2
                                }
                                                1    Arm_XC          out_pie63_1   FIRST 1  GRAPHIC 3

                                                2    Arm_XC          out_pie63_1   SEND 1   GRAPHIC 3

Arm_XC          out_pie63_1     GROUP 30 AS Box_Arm_XC
Box_Arm_XC      out_pie63_1                     1    Box_Arm_XC      in_cut90_1    FIRST 1  MOVE FOR W(5.06, 3.62) SEC

Box_Arm_XC      in_cut90_1      UNGROUP
                                RENAME Arm_XC
                                GRAPHIC 3

Arm_XC          in_cut90_1      INC in_90_1
                                                1    Arm_XC          Ms_Cut90_1    FIRST 1  DEC in_90_1

Arm_XC          Ms_Cut90_1      WAIT W(5.58, 13.2) SEC
                                IF jml_arm_XC < 1320 AND ruleroute_XC = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_XC = 0
                                 ROUTE 2
                                }

                                                1    Arm_XC          out_cut90_1   FIRST 1  GRAPHIC 4
```

```
                                                2    Arm_XC          out_cut90_1   SEND 1   GRAPHIC 4

 Arm_XC          out_cut90_1    GROUP 30 AS Box_Arm_XC
 Box_Arm_XC      out_cut90_1                    1    Box_Arm_XC      WIP           FIRST 1  MOVE FOR W(14.6, 6.65) SEC

 Arm_XC          WIP            GROUP 30 AS Box_Arm_XC
 Box_Arm_XC      WIP                            1    Box_Arm_XC      in_Arm_XC     FIRST 1  MOVE ON WIP_to_assy1_XC

 Box_Arm_XC      in_Arm_XC      UNGROUP
                                RENAME Arm_XC
                                GRAPHIC 4

 Arm_XC          in_Arm_XC      INC jml_arm_XC
                                IF jml_arm_XC >= 1320 THEN
                                {
                                 ruleroute_XC = 1
                                 henti_XC = 1
                                }
                                                1    Arm_XC          Assy1_XC      FIRST 1  DEC jml_arm_XC
                                                                                           IF (jml_arm_XC = 660) AND (henti_XC
= 1) THEN
                                                                                           {
                                                                                            SEND 1 Arm_XC TO out_cut90_1
                                                                                            SEND 1 Arm_XC TO out_pie63_1
                                                                                            SEND 1 Arm_XC TO out_Hyd
                                                                                            henti_XC = 0
                                                                                           }


 Arm_XC          Assy1_XC       JOIN 1 Rod_XC
                                JOIN 1 Boss
                                JOIN 1 Brake_shoe
                                WAIT W(15.3, 73.3) SEC
                                                1    Pedal_XC        out_assy1_XC  FIRST 1
 Pedal_XC        out_assy1_XC   GROUP 30 AS Box_Pedal_XC

 Box_Pedal_XC    out_assy1_XC                   1    Box_Pedal_XC    in_Pedal_XC   FIRST 1  MOVE FOR W(4.58, 2.98) SEC

 Box_Pedal_XC    in_Pedal_XC    UNGROUP
                                RENAME Pedal_XC

 Pedal_XC        in_Pedal_XC    INC in_pedalXC
                                                1    Pedal_XC        Assy2_XC      FIRST 1  DEC in_pedalXC

 Pedal_XC        Assy2_XC       JOIN 1 Spring_XC
                                JOIN 1 Switch_XC
                                WAIT W(11.1, 38.7) SEC
```

```
                                                1    Pedal_XC        out_assy2_XC  FIRST 1  GRAPHIC 2

Pedal_XC        out_assy2_XC   GROUP 30 AS Box_Pedal_XC
Box_Pedal_XC    out_assy2_XC                    1    Box_Pedal_XC    in_expand     FIRST 1  MOVE ON assy2_XC_to_exp

Box_Pedal_XC    in_expand      UNGROUP
                               RENAME Pedal_XC
                               GRAPHIC 2

Pedal_XC        in_expand      INC in_ex
                                                1    Pedal_XC        Ms_Expand     FIRST 1  DEC in_ex

Pedal_XC        Ms_Expand      WAIT W(7.44, 12.8) SEC
                                                1    Pedal_XC        out_expand    FIRST 1  GRAPHIC 2

Pedal_XC        out_expand     GROUP 30 AS Brake_pedal_XC
Brake_pedal_XC  out_expand                      1    Brake_pedal_XC  Shipping_XC   FIRST 1
Brake_pedal_XC  Shipping_XC    INC jml_XC
                                                1    Brake_pedal_XC  EXIT          SEND 1
Switch_H10      WIP            GROUP 50 AS Box_Switch_H10

Box_Switch_H10  WIP                             1    Box_Switch_H10  in_switch_H10 FIRST 1  MOVE ON WIP_to_assy2_H10

Box_Switch_H10  in_switch_H10  UNGROUP
                               RENAME Switch_H10

Switch_H10      in_switch_H10                   1    Switch_H10      Assy2_H10     JOIN 1
Spring_H10      WIP            GROUP 50 AS Box_Spring_H10

Box_Spring_H10  WIP                             1    Box_Spring_H10  in_spring_H10 FIRST 1  MOVE ON WIP_to_assy2_H10

Box_Spring_H10  in_spring_H10  UNGROUP
                               RENAME Spring_H10

Spring_H10      in_spring_H10                   1    Spring_H10      Assy2_H10     JOIN 1
Rod_H10         Receiving_Area GROUP 50 AS Box_Rod_H10

Box_Rod_H10     Receiving_Area                  1    Box_Rod_H10     in_blank2     FIRST 1
Box_Rod_H10     in_blank2      UNGROUP
                               RENAME Rod_H10

Rod_H10         in_blank2                       1    Rod_H10         Ms_Blank2,3   FIRST 1
Rod_H10         Ms_Blank2      WAIT W(6.73, 5.52) SEC
                                                1    Rod_H10         out_blank2    FIRST 1  GRAPHIC 2

Rod_H10         out_blank2     GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_blank2                      1    Box_Rod_H10     in_pie25_3    FIRST 1  MOVE FOR W(4.45, 3.15) SEC
```

```
Box_Rod_H10     in_pie25_3     UNGROUP
                               RENAME Rod_H10
                               GRAPHIC 2

Rod_H10         in_pie25_3                          1    Rod_H10         Ms_Pie25_3,2  FIRST 1
Rod_H10         Ms_Pie25_3     WAIT W(7.01, 14.6) SEC
                                                   1    Rod_H10         out_pie25_3   FIRST 1  GRAPHIC 3

Rod_H10         out_pie25_3    GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_pie25_3                         1    Box_Rod_H10     in_pie25_2    FIRST 1  MOVE FOR W(3.93, 3.27) SEC

Box_Rod_H10     in_pie25_2     UNGROUP
                               RENAME Rod_H10
                               GRAPHIC 3

Rod_H10         in_pie25_2                          1    Rod_H10         Ms_Pie25_2,2  FIRST 1
Rod_H10         Ms_Pie25_2     WAIT W(9.69, 15) SEC
                                                   1    Rod_H10         out_pie25_2   FIRST 1  GRAPHIC 3

Rod_H10         out_pie25_2    GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_pie25_2                         1    Box_Rod_H10     WIP           FIRST 1  MOVE ON pie25_2_to_WIP

Rod_H10         WIP            GROUP 50 AS Box_Rod_H10
Box_Rod_H10     WIP                                 1    Box_Rod_H10     in_Rod_H10    FIRST 1  MOVE ON WIP_to_assy1_H10

Box_Rod_H10     in_Rod_H10     UNGROUP
                               RENAME Rod_H10
                               GRAPHIC 3

Rod_H10         in_Rod_H10                          1    Rod_H10         Assy1_H10     JOIN 1
Arm_H10         Receiving_Area GROUP 30 AS Box_Arm_H10

Box_Arm_H10     Receiving_Area                      1    Box_Arm_H10     in_bend35     FIRST 1  MOVE FOR W(4.13, 4.43) SEC

Box_Arm_H10     in_bend35      UNGROUP
                               RENAME Arm_H10

Arm_H10         in_bend35      INC in_35
                                                   1    Arm_H10         Ms_Bend35     FIRST 1  DEC in_35

Arm_H10         Ms_Bend35      WAIT W(16.8, 19.4) SEC
                               IF jml_arm_H10 < 1560 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
```

```
                          ruleroute_H10 = 0
                          ROUTE 2
                         }
                                                1    Arm_H10         out_bend35    FIRST 1  GRAPHIC 2

                                                2    Arm_H10         out_bend35    SEND 1   GRAPHIC 2

Arm_H10         out_bend35     GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_bend35                      1    Box_Arm_H10     in_bend100    FIRST 1  MOVE FOR W(8.74, 78) SEC

Box_Arm_H10     in_bend100     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 2

Arm_H10         in_bend100     INC in_bend_100
                                                1    Arm_H10         Ms_Bend100    FIRST 1  DEC in_bend_100

Arm_H10         Ms_Bend100     WAIT W(5.34, 13.7) SEC
                               IF jml_arm_H10 < 1560 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H10 = 0
                                ROUTE 2
                               }
                                                1    Arm_H10         out_bend100   FIRST 1  GRAPHIC 3
                                                2    Arm_H10         out_bend100   SEND 1   GRAPHIC 3
Arm_H10         out_bend100    GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_bend100                     1    Box_Arm_H10     in_pie63_3    FIRST 1  MOVE FOR W(2.28, 3.77) SEC

Box_Arm_H10     in_pie63_3     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 3

Arm_H10         in_pie63_3     INC in_63_3
                                                1    Arm_H10         Ms_Pie63_3    FIRST 1  DEC in_63_3

Arm_H10         Ms_Pie63_3     WAIT W(18.1, 25) SEC
                               IF jml_arm_H10 < 1560 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H10 = 0
```

```
                          ROUTE 2
                          }
                                                1    Arm_H10         out_pie63_3   FIRST 1  GRAPHIC 4

                                                2    Arm_H10         out_pie63_3   SEND 1   GRAPHIC 4

Arm_H10         out_pie63_3    GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_pie63_3                         1    Box_Arm_H10     in_cut100     FIRST 1  MOVE FOR W(5.81, 2.56) SEC

Box_Arm_H10     in_cut100      UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 4

Arm_H10         in_cut100      INC in_cut_100
                                                1    Arm_H10         Ms_Cut100     FIRST 1  DEC in_cut_100

Arm_H10         Ms_Cut100      WAIT W(5.88, 12.9) SEC
                               IF jml_arm_H10 < 1560 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H10 = 0
                                ROUTE 2
                               }
                                                1    Arm_H10         out_cut100    FIRST 1  GRAPHIC 5

                                                2    Arm_H10         out_cut100    SEND 1   GRAPHIC 5

Arm_H10         out_cut100     GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_cut100                          1    Box_Arm_H10     WIP           FIRST 1  MOVE FOR W(7.62, 7.15) SEC

Arm_H10         WIP            GROUP 30 AS Box_Arm_H10

Box_Arm_H10     WIP                                 1    Box_Arm_H10     in_Arm_H10    FIRST 1  MOVE ON WIP_to_assy1_H10

Box_Arm_H10     in_Arm_H10     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 5

Arm_H10         in_Arm_H10     INC jml_arm_H10
                               IF jml_arm_H10 >= 1560 THEN
                               {
                                ruleroute_H10 = 1
                                henti_H10 = 1
                               }
```

```
                                                1    Arm_H10         Assy1_H10     FIRST 1  IF (jml_arm_H10 = 780) AND
(henti_H10 = 1) THEN
                                                                                           {
                                                                                            SEND 1 Arm_H10 TO out_cut100
                                                                                            SEND 1 Arm_H10 TO out_pie63_3
                                                                                            SEND 1 Arm_H10 TO out_bend100
                                                                                            SEND 1 Arm_H10 TO out_bend35
                                                                                            henti_H10 = 0
                                                                                           }

                                                                                           DEC jml_arm_H10

 Arm_H10         Assy1_H10      JOIN 1 Boss
                                JOIN 1 Brake_shoe
                                JOIN 1 Rod_H10
                                WAIT W(41.4, 103) SEC
                                                1    Pedal_H10       out_assy1_H10 FIRST 1
 Pedal_H10       out_assy1_H10  GROUP 30 AS Box_Pedal_H10

 Box_Pedal_H10   out_assy1_H10                  1    Box_Pedal_H10   in_Pedal_H10  FIRST 1  MOVE FOR W(6.47, 5.9) SEC

 Box_Pedal_H10   in_Pedal_H10   UNGROUP
                                RENAME Pedal_H10

 Pedal_H10       in_Pedal_H10   INC in_pedalH10
                                                1    Pedal_H10       Assy2_H10     FIRST 1  DEC in_pedalH10

 Pedal_H10       Assy2_H10      JOIN 1 Spring_H10
                                JOIN 1 Switch_H10
                                WAIT W(17.5, 33.3) SEC
                                                1    Pedal_H10       out_assy2_H10 FIRST 1  GRAPHIC 2

 Pedal_H10       out_assy2_H10  GROUP 30 AS Box_Pedal_H10

 Box_Pedal_H10   out_assy2_H10                  1    Box_Pedal_H10   in_expand     FIRST 1  MOVE ON assy2_H10_to_exp
 Box_Pedal_H10   in_expand      UNGROUP
                                RENAME Pedal_H10
                                GRAPHIC 2

 Pedal_H10       in_expand      INC in_ex
                                                1    Pedal_H10       Ms_Expand     FIRST 1  DEC in_ex

 Pedal_H10       Ms_Expand      WAIT W(7.44, 12.8) SEC
                                                1    Pedal_H10       out_expand    FIRST 1  GRAPHIC 2

 Pedal_H10       out_expand     GROUP 30 AS Brake_pedal_H10

 Brake_pedal_H10 out_expand                     1    Brake_pedal_H10 Shipping_H10  FIRST 1  MOVE ON exp_to_Gd
```

```
Brake_pedal_H10 Shipping_H10   INC jml_H10
                                                1    Brake_pedal_H10 EXIT          SEND 1
Switch_H00      WIP            GROUP 50 AS Box_Switch_H00

Box_Switch_H00  WIP                             1    Box_Switch_H00  in_switch_H00 FIRST 1  MOVE ON WIP_to_assy2_H00
Box_Switch_H00  in_switch_H00  UNGROUP
                               RENAME Switch_H00

Switch_H00      in_switch_H00                   1    Switch_H00      Assy2_H00     JOIN 1
Spring_H00      WIP            GROUP 50 AS Box_Spring_H00

Box_Spring_H00  WIP                             1    Box_Spring_H00  in_spring_H00 FIRST 1  MOVE ON WIP_to_assy2_H00
Box_Spring_H00  in_spring_H00  UNGROUP
                               RENAME Spring_H00

Spring_H00      in_spring_H00                   1    Spring_H00      Assy2_H00     JOIN 1
Rod_H00         Receiving_Area GROUP 50 AS Box_Rod_H00

Box_Rod_H00     Receiving_Area                  1    Box_Rod_H00     in_blank2     FIRST 1
Box_Rod_H00     in_blank2      UNGROUP
                               RENAME Rod_H00

Rod_H00         in_blank2                       1    Rod_H00         Ms_Blank2,2   FIRST 1
Rod_H00         Ms_Blank2      WAIT W(5.67, 5.25) SEC
                                                1    Rod_H00         out_blank2    FIRST 1  GRAPHIC 2

Rod_H00         out_blank2     GROUP 50 AS Box_Rod_H00

Box_Rod_H00     out_blank2                      1    Box_Rod_H00     in_pie25_3    FIRST 1  MOVE FOR W(4.45, 3.15) SEC

Box_Rod_H00     in_pie25_3     UNGROUP
                               RENAME Rod_H00
                               GRAPHIC 2

Rod_H00         in_pie25_3                      1    Rod_H00         Ms_Pie25_3,1  FIRST 1
Rod_H00         Ms_Pie25_3     WAIT W(9.92, 14.8) SEC
                                                1    Rod_H00         out_pie25_3   FIRST 1  GRAPHIC 3

Rod_H00         out_pie25_3    GROUP 50 AS Box_Rod_H00

Box_Rod_H00     out_pie25_3                     1    Box_Rod_H00     in_pie25_2    FIRST 1  MOVE FOR W(3.93, 3.27) SEC

Box_Rod_H00     in_pie25_2     UNGROUP
                               RENAME Rod_H00
                               GRAPHIC 3

Rod_H00         in_pie25_2                      1    Rod_H00         Ms_Pie25_2,1  FIRST 1
```

```
Rod_H00         Ms_Pie25_2      WAIT W(9.7, 16) SEC
                                                1    Rod_H00         out_pie25_2   FIRST 1  GRAPHIC 3

Rod_H00         out_pie25_2     GROUP 50 AS Box_Rod_H00

Box_Rod_H00     out_pie25_2                     1    Box_Rod_H00     WIP           FIRST 1  MOVE ON pie25_2_to_WIP

Rod_H00         WIP             GROUP 50 AS Box_Rod_H00

Box_Rod_H00     WIP                             1    Box_Rod_H00     in_Rod_H00    FIRST 1  MOVE ON WIP_to_assy1_H00
Box_Rod_H00     in_Rod_H00      UNGROUP
                                RENAME Rod_H00
                                GRAPHIC 3

Rod_H00         in_Rod_H00                      1    Rod_H00         Assy1_H00     JOIN 1
Arm_H00         Receiving_Area  GROUP 30 AS Box_Arm_H00

Box_Arm_H00     Receiving_Area                  1    Box_Arm_H00     in_bend35     FIRST 1  MOVE FOR W(4.13, 4.43) SEC

Box_Arm_H00     in_bend35       UNGROUP
                                RENAME Arm_H00

Arm_H00         in_bend35       INC in_35
                                                1    Arm_H00         Ms_Bend35_2   FIRST 1  DEC in_35

Arm_H00         Ms_Bend35_2     WAIT W(16.8, 19.4)SEC
                                IF jml_arm_H00 < 1380 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_bend35    FIRST 1  GRAPHIC 2

                                                2    Arm_H00         out_bend35    SEND 1   GRAPHIC 2

Arm_H00         out_bend35      GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_bend35                      1    Box_Arm_H00     in_blank2     FIRST 1  MOVE ON bend35_to_blank



Box_Arm_H00     in_blank2       UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 2
```

```
Arm_H00         in_blank2       INC in_blank_2
                                                1    Arm_H00         Ms_Blank2,1   FIRST 1  DEC in_blank_2

Arm_H00         Ms_Blank2       WAIT W(11.1, 15.6) SEC
                                IF jml_arm_H00 < 1380 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_blank2    FIRST 1  GRAPHIC 3
                                                2    Arm_H00         out_blank2    SEND 1   GRAPHIC 3
Arm_H00         out_blank2      GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_blank2                      1    Box_Arm_H00     in_pie63_2    FIRST 1  MOVE ON blank_to_pie63_2


Box_Arm_H00     in_pie63_2      UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 3

Arm_H00         in_pie63_2      INC in_63_2
                                                1    Arm_H00         Ms_Pie63_2    FIRST 1  DEC in_63_2

Arm_H00         Ms_Pie63_2      WAIT W(14.4, 27.2) SEC
                                IF jml_arm_H00 < 1380 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_pie63_2   FIRST 1  GRAPHIC 4

                                                2    Arm_H00         out_pie63_2   SEND 1   GRAPHIC 4

Arm_H00         out_pie63_2     GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_pie63_2                     1    Box_Arm_H00     in_cut90_2    FIRST 1  MOVE FOR W(4.16, 3.52) SEC

Box_Arm_H00     in_cut90_2      UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 4
```

```
Arm_H00         in_cut90_2      INC in_90_2
                                                1    Arm_H00         Ms_Cut90_2    FIRST 1  DEC in_90_2

Arm_H00         Ms_Cut90_2      WAIT W(17.1, 14.8) SEC
                                IF jml_arm_H00 < 1380 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_cut90_2   FIRST 1  GRAPHIC 5

                                                2    Arm_H00         out_cut90_2   SEND 1   GRAPHIC 5

Arm_H00         out_cut90_2     GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_cut90_2                     1    Box_Arm_H00     WIP           FIRST 1  MOVE FOR W(8.22, 7.26) SEC

Arm_H00         WIP             GROUP 30 AS Box_Arm_H00

Box_Arm_H00     WIP                             1    Box_Arm_H00     in_Arm_H00    FIRST 1  MOVE ON WIP_to_assy1_H00
Box_Arm_H00     in_Arm_H00      UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 5

Arm_H00         in_Arm_H00      INC jml_arm_H00

                                IF jml_arm_H00 >= 1380 THEN
                                {
                                 ruleroute_H00 = 1
                                 henti_H00 = 1
                                }
                                                1    Arm_H00         Assy1_H00     FIRST 1  DEC jml_arm_H00
                                                                                            IF (jml_arm_H00 = 690) AND
(henti_H00 = 1) THEN
                                                                                            {
                                                                                             SEND 1 Arm_H00 TO out_cut90_2
                                                                                             SEND 1 Arm_H00 TO out_pie63_2
                                                                                             SEND 1 Arm_H00 TO out_blank2
                                                                                             SEND 1 Arm_H00 TO out_bend35
                                                                                             henti_H00 = 0
                                                                                            }
```

```
Arm_H00          Assy1_H00       JOIN 1 Boss
                                 JOIN 1 Brake_shoe
                                 JOIN 1 Rod_H00
                                 WAIT W(25.6, 111) SEC
                                                  1    Pedal_H00       out_assy1_H00 FIRST 1
Pedal_H00        out_assy1_H00   GROUP 30 AS Box_Pedal_H00

Box_Pedal_H00    out_assy1_H00                    1    Box_Pedal_H00   in_Pedal_H00  FIRST 1  MOVE FOR W(4.55, 3.3) SEC

Box_Pedal_H00    in_Pedal_H00    UNGROUP
                                 RENAME Pedal_H00

Pedal_H00        in_Pedal_H00    INC in_pedalH00
                                                  1    Pedal_H00       Assy2_H00     FIRST 1  DEC in_pedalH00

Pedal_H00        Assy2_H00       JOIN 1 Spring_H00
                                 JOIN 1 Switch_H00
                                 WAIT W(11.2, 37.8) SEC
                                                  1    Pedal_H00       out_assy2_H00 FIRST 1  GRAPHIC 2

Pedal_H00        out_assy2_H00   GROUP 30 AS Box_Pedal_H00

Box_Pedal_H00    out_assy2_H00                    1    Box_Pedal_H00   in_expand     FIRST 1  MOVE ON assy2_H00_to_exp
Box_Pedal_H00    in_expand       UNGROUP
                                 RENAME Pedal_H00
                                 GRAPHIC 2

Pedal_H00        in_expand       INC in_ex
                                                  1    Pedal_H00       Ms_Expand     FIRST 1  DEC in_ex

Pedal_H00        Ms_Expand       WAIT W(7.44, 12.8) SEC
                                                  1    Pedal_H00       out_expand    FIRST 1  GRAPHIC 2

Pedal_H00        out_expand      GROUP 30 AS Brake_pedal_H00

Brake_pedal_H00  out_expand                       1    Brake_pedal_H00 Shipping_H00  FIRST 1  MOVE ON exp_to_Gd

Brake_pedal_H00  Shipping_H00    INC jml_H00
                                                  1    Brake_pedal_H00 EXIT          SEND 1
pengiriman       Shipping        SEND 34 Brake_pedal_XC TO Exit
                                 SEND 26 Brake_pedal_H10 TO Exit
                                 SEND 6 Brake_pedal_H00 TO Exit

                                 IF jml_XC <= 34 THEN
                                 {
                                 kekurangan_XC = 34 - jml_XC
                                 SEND 15 Brake_pedal_XC TO Exit
                                 total_kurang_XC = total_kurang_XC + (34 - jml_XC)
```

```
}


IF jml_H10 <= 26 THEN
{
kekurangan_H10 = 26 - jml_H10
SEND 13 Brake_pedal_H10 TO Exit
total_kurang_H10 = total_kurang_H10 + (26 - jml_H10)
}


IF jml_H00 <= 6 THEN
{
kekurangan_H00 = 6 - jml_H00
SEND 3 Brake_pedal_H00 TO Exit
total_kurang_H00 = total_kurang_H00 + (6 - jml_H00)
}



if total_kurang_XC < 0 then total_kurang_XC = 0
if total_kurang_H10 < 0 then total_kurang_H10 = 0
if total_kurang_H00 < 0 then total_kurang_H00 = 0
                     1    pengiriman      EXIT          FIRST 1  DEC jml_XC, 34
                                                                 DEC jml_H10, 26
                                                                 DEC jml_H00, 6

                                                                 if jml_XC < 0 then jml_XC = 0
                                                                 if jml_H10 < 0 then jml_H10 = 0
                                                                 if jml_H00 < 0 then jml_H00 = 0
```

```
*****************************************************************************
*                                Arrivals                                   *
*****************************************************************************

  Entity     Location       Qty each   First Time Occurrences Frequency  Logic
  ---------- -------------- ---------- ---------- ----------- ---------- ------------
  Boss       WIP            4500       0          inf         7 hr
  Brake_shoe Receiving_Area 2500       0          INF         7 hr
  Brake_shoe WIP            500        0          1
  Arm_XC     Receiving_Area 1500       0          INF         7 hr
  Arm_XC     in_pie63_1     150        0          1
  Arm_XC     in_cut90_1     120        0          1
  Arm_XC     WIP            600        0          1
  Pedal_XC   in_expand      150        0          1
  Rod_XC     Receiving_Area 1500       0          INF         7 hr
  Rod_XC     in_pie25_1     90         0          1
  Rod_XC     WIP            500        0          1
```

Switch_XC	WIP	1500	0	INF	7 hr
Spring_XC	WIP	1500	0	inf	7 hr
Arm_H10	Receiving_Area	1500	0	INF	7 hr
Arm_H10	in_bend100	120	0	1	
Arm_H10	in_pie63_3	90	0	1	
Arm_H10	in_cut100	90	0	1	
Arm_H10	WIP	660	0	1	
Pedal_H10	in_expand	120	0	1	
Rod_H10	Receiving_Area	1500	0	INF	7 hr
Rod_H10	in_pie25_3	200	0	1	
Rod_H10	in_pie25_2	150	0	1	
Rod_H10	WIP	500	0	1	
Switch_H10	WIP	1500	0	INF	7 hr
Spring_H10	WIP	1500	0	INF	7 hr
Arm_H00	Receiving_Area	1500	0	INF	35 hr
Arm_H00	in_blank2	120	0	1	
Arm_H00	in_pie63_2	120	0	1	
Arm_H00	in_cut90_2	90	0	1	
Arm_H00	WIP	600	0	1	
Pedal_H00	in_expand	120	0	1	
Rod_H00	Receiving_Area	1500	0	INF	35 hr
Rod_H00	in_pie25_3	200	0	1	
Rod_H00	in_pie25_2	150	0	1	
Rod_H00	WIP	600	0	1	
Switch_H00	WIP	1500	0	INF	35 hr
Switch_H00	WIP	1000	0	1	
Spring_H00	WIP	1500	0	INF	35 hr
Spring_H00	WIP	1000	0	1	
pengiriman	Shipping	1	7 hr	INF	7 hr

****
* Variables (global) *
****

ID	Type	Initial value	Stats
kekurangan_XC	Integer	0	Time Series
kekurangan_H10	Integer	0	Time Series
kekurangan_H00	Integer	0	Time Series
jml_XC	Integer	0	Time Series
jml_H10	Integer	0	Time Series
jml_H00	Integer	0	Time Series
status_XC	Integer	0	Time Series
ruleroute_XC	Integer	0	Time Series
henti_XC	Integer	0	Time Series
status_H10	Integer	0	Time Series
ruleroute_H10	Integer	0	Time Series
henti_H10	Integer	0	Time Series

status_H00	Integer	0	Time Series
ruleroute_H00	Integer	0	Time Series
henti_H00	Integer	0	Time Series
jml_arm_XC	Integer	0	Time Series
jml_arm_H10	Integer	0	Time Series
jml_arm_H00	Integer	0	Time Series
total_kurang_XC	Integer	0	Time Series
total_kurang_H10	Integer	0	Time Series
total_kurang_H00	Integer	0	Time Series
hyd	Integer	0	Time Series
in_63_1	Integer	0	Time Series
in_90_1	Integer	0	Time Series
in_pedalXC	Integer	0	Time Series
in_ex	Integer	0	Time Series
in_35	Integer	0	Time Series
in_bend_100	Integer	0	Time Series
in_63_3	Integer	0	Time Series
in_cut_100	Integer	0	Time Series
in_pedalH10	Integer	0	Time Series
in_blank_2	Integer	0	Time Series
in_63_2	Integer	0	Time Series
in_90_2	Integer	0	Time Series
in_pedalH00	Integer	0	Time Series

OUTPUT SIMULASI AKTUAL

General Report
Output from D:\Lina's Document\TA\Aktual.MOD
Date: Apr/21/2008   Time: 07:19:27 AM

Scenario   : Normal Run
Replication   : 1 of 1
Simulation Time : 154 hr

LOCATIONS

Location Name	Scheduled Hours	Capacity	Total Entries	Average Minutes Per Entry	Average Contents	Maximum Contents	Current Contents	% Util
Ms Forging	154	1	55000	0.09	0.58	1	0	58.18
Ms Blank1	154	1	33000	0.06	0.22	1	0	22.36
Ms Pie25 1	154	2	33090	0.26	0.93	2	0	46.60
Ms Hyd	154	2	33000	0.39	1.39	2	0	69.96
Ms Pie63 1	154	2	22440	0.82	2	2	2	100.00
Ms Cut90 1	154	1	22530	0.21	0.52	1	0	52.45
Ms Blank2	154	1	48121	0.11	0.57	1	1	57.69
Ms Pie25 2	154	2	41200	0.24	1.07	2	0	53.66
Ms Pie25 3	154	2	40900	0.22	1.01	2	0	50.62
Ms Bend35	154	2	23428	0.72	1.83	2	2	91.98
Ms Bend35 2	154	2	7500	0.31	0.25	2	0	12.71
Ms Bend100	154	1	23520	0.28	0.72	1	0	72.74
Ms Pie63 3	154	2	16950	1.09	1.99	2	2	99.99
Ms Cut100	154	1	17010	0.22	0.41	1	0	41.58
Ms Pie63 2	154	2	7740	0.43	0.36	2	0	18.34
Ms Cut90 2	154	1	7830	0.23	0.20	1	0	20.27
Assy1 XC.1	154	1	7712	1.18	0.98	1	1	98.56
Assy1 XC.2	154	1	7703	1.18	0.98	1	1	98.43
Assy1 XC.3	154	1	7699	1.18	0.98	1	1	98.48
Assy1 XC	462	3	23114	1.18	0.98	69345	3	98.49
Assy1 H10.1	154	1	5457	1.69	0.99	1	1	100.00
Assy1 H10.2	154	1	5457	1.69	0.99	1	1	100.00
Assy1 H10.3	154	1	5455	1.69	0.99	1	1	100.00
Assy1 H10	462	3	16369	1.69	0.99	49110	3	100.00
Assy1 H00.1	154	1	2622	1.81	0.51	1	1	51.44
Assy1 H00.2	154	1	2625	1.81	0.51	1	1	51.43
Assy1 H00.3	154	1	2627	1.80	0.51	1	1	51.40
Assy1 H00	462	3	7874	1.81	0.51	23625	3	51.42

Assy2 XC	154	1	14973	0.61	0.99	1	1	99.87
Assy2 H10	154	1	16337	0.53	0.95	1	1	95.15
Assy2 H00	154	1	7839	0.60	0.51	1	1	51.06
Ms Expand	154	1	39443	0.20	0.85	1	1	85.46
Receiving Area	154	999999	210500	0.00	0	50	0	0.00
WIP	154	999999	266624	0.00	0	50	0	0.00
in forging	154	999999	1100	124.57	14.83	50	0	0.00
in blank1	154	999999	660	48.44	3.46	30	0	0.00
in blank2	154	999999	1210	168.73	22.09	180	30	0.00
in pie25 1	154	999999	750	49.76	4.03	88	0	0.00
in pie25 2	154	999999	1118	42.35	5.12	298	0	0.00
in pie25 3	154	999999	1210	60.63	7.94	398	0	0.00
in Hyd	154	999999	1100	149.54	17.80	50	0	0.00
in bend35	154	999999	1350	1097.38	160.33	400	320	0.02
in bend100	154	999999	900	77.48	7.54	119	0	0.00
in cut100	154	999999	654	7.60	0.53	89	0	0.00
in cut90 1	154	999999	867	8.18	0.76	119	0	0.00
in cut90 2	154	999999	348	8.09	0.30	89	0	0.00
in pie63 1	154	999999	1250	1379.70	186.64	368	357	0.02
in pie63 2	154	999999	374	8.34	0.33	118	0	0.00
in pie63 3	154	999999	874	1379.96	130.52	223	222	0.01
in Arm XC	154	999999	771	122.24	10.20	45	1	0.00
in Rod XC	154	999999	671	1594.55	115.79	220	209	0.01
in Boss XC	154	999999	1100	1563.90	186.18	364	330	0.02
in Shoe XC	154	999999	515	512.18	28.54	62	53	0.00
in Arm H10	154	999999	589	609.69	38.86	53	44	0.00
in Rod H10	154	999999	677	2611.61	191.34	358	350	0.02
in Boss H10	154	999999	1100	2542.17	302.63	580	555	0.03
in Shoe H10	154	999999	383	695.68	28.83	62	56	0.00
in Arm H00	154	999999	281	243.24	7.39	38	19	0.00
in Rod H00	154	999999	169	482.40	8.82	31	12	0.00
in Boss H00	154	999999	1100	3608.80	429.62	861	838	0.04
in Shoe H00	154	999999	212	1290.83	29.61	61	55	0.00
in switch XC	154	999999	660	2741.98	195.85	375	361	0.02
in spring XC	154	999999	660	2741.97	195.85	375	361	0.02
in Pedal XC	154	999999	770	1677.87	139.82	272	271	0.01
in switch H10	154	999999	660	2553.66	182.40	349	334	0.02
in spring H10	154	999999	660	2553.66	182.40	349	334	0.02
in Pedal H10	154	999999	545	15.59	0.92	1	1	0.00
in switch H00	154	999999	170	833.01	15.32	50	14	0.00
in spring H00	154	999999	170	833.01	15.32	50	14	0.00
in Pedal H00	154	999999	262	17.98	0.51	2	1	0.00
in expand	154	999999	1694	25.28	4.63	389	3	0.00
out forging	154	999999	55000	2.39	14.25	50	0	0.00
out blank1	154	999999	33000	1.53	5.46	50	0	0.00
out blank2	154	999999	48120	2.67	13.91	78	0	0.00
out pie25 1	154	999999	33090	9.14	32.76	50	40	0.00
out pie25 2	154	999999	41200	2.97	13.24	55	0	0.00
out pie25 3	154	999999	40900	2.80	12.39	51	0	0.00

out Hyd	154	999999	33000	2.84	10.15	30	0	0.00
out bend35	154	999999	30926	4.88	16.36	59	26	0.00
out bend100	154	999999	23520	4.78	12.17	30	0	0.00
out cut100	154	999999	17010	2.92	5.38	30	0	0.00
out pie63 1	154	999999	22438	6.11	14.84	30	28	0.00
out pie63 2	154	999999	7740	3.14	2.63	30	0	0.00
out pie63 3	154	999999	16948	8.21	15.07	30	28	0.00
out cut90 1	154	999999	22530	2.97	7.24	30	0	0.00
out cut90 2	154	999999	7830	3.47	2.94	30	0	0.00
out assy1 XC	154	999999	23111	5.66	14.17	30	11	0.00
out assy1 H10	154	999999	16366	8.17	14.47	30	16	0.00
out assy1 H00	154	999999	7871	8.76	7.46	30	11	0.00
out assy2 XC	154	999999	14972	8.93	14.48	30	2	0.00
out assy2 H10	154	999999	16336	7.79	13.78	30	16	0.00
out assy2 H00	154	999999	7838	8.71	7.39	30	8	0.00
out expand	154	999999	39442	2.90	12.38	30	22	0.00
Shipping XC	154	999999	503	10.28	0.56	23	0	0.00
Shipping H10	154	999999	547	10.17	0.60	24	0	0.00
Shipping H00	154	999999	264	2972.01	84.91	138	132	0.01
Shipping	154	1	22	0.00	0	1	0	0.00

LOCATION STATES BY PERCENTAGE (Multiple Capacity)

Location Name	Scheduled Hours	% Empty	% Partially Occupied	% Full	% Down
Ms Pie25 1	154	53.38	0.03	46.59	0.00
Ms Hyd	154	30.01	0.06	69.93	0.00
Ms Pie63 1	154	0.00	0.00	100.00	0.00
Ms Pie25 2	154	46.32	0.03	53.65	0.00
Ms Pie25 3	154	49.36	0.03	50.61	0.00
Ms Bend35	154	8.01	0.01	91.98	0.00
Ms Bend35 2	154	87.29	0.01	12.71	0.00
Ms Pie63 3	154	0.01	0.01	99.98	0.00
Ms Pie63 2	154	81.44	0.44	18.12	0.00
Receiving Area	154	100.00	0.00	0.00	0.00
WIP	154	100.00	0.00	0.00	0.00
in forging	154	41.85	58.15	0.00	0.00
in blank1	154	77.65	22.35	0.00	0.00
in blank2	154	42.34	57.66	0.00	0.00
in pie25 1	154	53.45	46.55	0.00	0.00
in pie25 2	154	46.39	53.61	0.00	0.00
in pie25 3	154	49.42	50.58	0.00	0.00
in Hyd	154	30.10	69.90	0.00	0.00
in bend35	154	8.03	91.97	0.00	0.00
in bend100	154	28.47	71.53	0.00	0.00

in cut100	154	59.53	40.47	0.00	0.00
in cut90 1	154	49.07	50.93	0.00	0.00
in cut90 2	154	80.36	19.64	0.00	0.00
in pie63 1	154	0.00	100.00	0.00	0.00
in pie63 2	154	82.65	17.35	0.00	0.00
in pie63 3	154	0.02	99.98	0.00	0.00
in Arm XC	154	3.83	96.17	0.00	0.00
in Rod XC	154	0.00	100.00	0.00	0.00
in Boss XC	154	0.00	100.00	0.00	0.00
in Shoe XC	154	0.00	100.00	0.00	0.00
in Arm H10	154	0.00	100.00	0.00	0.00
in Rod H10	154	0.00	100.00	0.00	0.00
in Boss H10	154	0.00	100.00	0.00	0.00
in Shoe H10	154	0.00	100.00	0.00	0.00
in Arm H00	154	48.62	51.38	0.00	0.00
in Rod H00	154	0.00	100.00	0.00	0.00
in Boss H00	154	0.00	100.00	0.00	0.00
in Shoe H00	154	0.00	100.00	0.00	0.00
in switch XC	154	0.00	100.00	0.00	0.00
in spring XC	154	0.00	100.00	0.00	0.00
in Pedal XC	154	0.13	99.87	0.00	0.00
in switch H10	154	0.00	100.00	0.00	0.00
in spring H10	154	0.00	100.00	0.00	0.00
in Pedal H10	154	8.00	92.00	0.00	0.00
in switch H00	154	0.00	100.00	0.00	0.00
in spring H00	154	0.00	100.00	0.00	0.00
in Pedal H00	154	49.69	50.31	0.00	0.00
in expand	154	15.24	84.76	0.00	0.00
out forging	154	42.99	57.01	0.00	0.00
out blank1	154	78.08	21.92	0.00	0.00
out blank2	154	43.49	56.51	0.00	0.00
out pie25 1	154	0.95	99.05	0.00	0.00
out pie25 2	154	47.38	52.62	0.00	0.00
out pie25 3	154	50.39	49.61	0.00	0.00
out Hyd	154	32.35	67.65	0.00	0.00
out bend35	154	9.99	90.01	0.00	0.00
out bend100	154	29.04	70.96	0.00	0.00
out cut100	154	59.64	40.36	0.00	0.00
out pie63 1	154	3.28	96.72	0.00	0.00
out pie63 2	154	82.59	17.41	0.00	0.00
out pie63 3	154	2.41	97.59	0.00	0.00
out cut90 1	154	49.20	50.80	0.00	0.00
out cut90 2	154	80.41	19.59	0.00	0.00
out assy1 XC	154	5.89	94.11	0.00	0.00
out assy1 H10	154	3.53	96.47	0.00	0.00
out assy1 H00	154	50.25	49.75	0.00	0.00
out assy2 XC	154	3.46	96.54	0.00	0.00
out assy2 H10	154	8.03	91.97	0.00	0.00
out assy2 H00	154	50.64	49.36	0.00	0.00

out expand	154	17.41	82.59	0.00	0.00
Shipping XC	154	95.52	4.48	0.00	0.00
Shipping H10	154	94.22	5.78	0.00	0.00
Shipping H00	154	0.65	99.35	0.00	0.00

LOCATION STATES BY PERCENTAGE (Single Capacity/Tanks)

Location Name	Scheduled Hours	% Operation	% Setup	% Idle	% Waiting	% Blocked	% Down
Ms Forging	154	58.18	0.00	41.82	0.00	0.00	0.00
Ms Blank1	154	22.36	0.00	77.64	0.00	0.00	0.00
Ms Cut90 1	154	49.61	0.00	47.55	2.84	0.00	0.00
Ms Blank2	154	57.69	0.00	42.31	0.00	0.00	0.00
Ms Bend100	154	53.53	0.00	27.26	19.21	0.00	0.00
Ms Cut100	154	36.74	0.00	58.42	4.84	0.00	0.00
Ms Cut90 2	154	20.27	0.00	79.73	0.00	0.00	0.00
Assy1 XC.1	154	98.56	0.00	1.44	0.00	0.00	0.00
Assy1 XC.2	154	98.43	0.00	1.57	0.00	0.00	0.00
Assy1 XC.3	154	98.48	0.00	1.52	0.00	0.00	0.00
Assy1 XC	462	98.49	0.00	1.51	0.00	0.00	0.00
Assy1 H10.1	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10.2	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10.3	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10	462	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H00.1	154	51.44	0.00	48.56	0.00	0.00	0.00
Assy1 H00.2	154	51.43	0.00	48.57	0.00	0.00	0.00
Assy1 H00.3	154	51.40	0.00	48.60	0.00	0.00	0.00
Assy1 H00	462	51.42	0.00	48.58	0.00	0.00	0.00
Assy2 XC	154	99.87	0.00	0.13	0.00	0.00	0.00
Assy2 H10	154	95.15	0.00	4.85	0.00	0.00	0.00
Assy2 H00	154	51.06	0.00	48.94	0.00	0.00	0.00
Ms Expand	154	85.46	0.00	14.54	0.00	0.00	0.00
Shipping	154	0.00	0.00	100.00	0.00	0.00	0.00

FAILED ARRIVALS

Entity Name	Location Name	Total Failed
Boss	WIP	0
Brake shoe	Receiving Area	0
Brake shoe	WIP	0
Arm XC	Receiving Area	0
Arm XC	WIP	0
Arm XC	in cut90 1	0

Arm XC	in pie63 1	0
Rod XC	Receiving Area	0
Rod XC	WIP	0
Rod XC	in pie25 1	0
Switch XC	WIP	0
Spring XC	WIP	0
Pedal XC	in expand	0
Arm H10	Receiving Area	0
Arm H10	WIP	0
Arm H10	in bend100	0
Arm H10	in cut100	0
Arm H10	in pie63 3	0
Rod H10	Receiving Area	0
Rod H10	WIP	0
Rod H10	in pie25 2	0
Rod H10	in pie25 3	0
Switch H10	WIP	0
Spring H10	WIP	0
Pedal H10	in expand	0
Arm H00	Receiving Area	0
Arm H00	WIP	0
Arm H00	in blank2	0
Arm H00	in cut90 2	0
Arm H00	in pie63 2	0
Rod H00	Receiving Area	0
Rod H00	WIP	0
Rod H00	in pie25 2	0
Rod H00	in pie25 3	0
Switch H00	WIP	0
Spring H00	WIP	0
Pedal H00	in expand	0
pengiriman	Shipping	0

ENTITY ACTIVITY

Entity Name	Total Exits	Current Quantity In System	Average Minutes In System	Average Minutes In Move Logic	Average Minutes Wait For Res, etc.	Average Minutes In Operation	Average Minutes Blocked
Boss	47357	56143	2163.97	0.18	0.00	0.00	2163.79
Brake shoe	47357	10643	799.59	0.48	2.37	0.09	796.64
Arm XC	0	12259	-	-	-	-	-
Rod XC	23114	11976	1703.14	0.50	10.43	0.31	1691.89
Switch XC	14973	19527	2737.02	0.28	0.00	0.00	2736.73
Spring XC	14973	19527	2737.02	0.28	0.00	0.00	2736.73
Pedal XC	15090	8171	2960.87	0.60	28.72	2.92	2928.61
Box Arm XC	3718	50	0.10	0.10	0.00	0.00	0.00

Box Rod XC	1991	30	0.16	0.16	0.00	0.00	0.00
Box Switch XC	660	30	0.28	0.28	0.00	0.00	0.00
Box Spring XC	660	30	0.28	0.28	0.00	0.00	0.00
Box Boss	3300	150	0.16	0.16	0.00	0.00	0.00
Box Shoe	2210	50	0.24	0.24	0.00	0.00	0.00
Box Arm H10	3817	50	0.33	0.33	0.00	0.00	0.00
Box Rod H10	2691	0	0.10	0.10	0.00	0.00	0.00
Box Switch H10	660	30	0.24	0.24	0.00	0.00	0.00
Box Spring H10	660	30	0.24	0.24	0.00	0.00	0.00
Box Arm H00	1293	0	0.11	0.11	0.00	0.00	0.00
Box Rod H00	623	0	0.08	0.08	0.00	0.00	0.00
Box Switch H00	170	0	0.20	0.20	0.00	0.00	0.00
Box Spring H00	170	0	0.20	0.20	0.00	0.00	0.00
Arm H10	0	19094	-	-	-	-	-
Rod H10	16369	18981	2754.85	0.40	7.49	0.53	2746.42
Switch H10	16337	18163	2549.64	0.24	0.00	0.00	2549.39
Spring H10	16337	18163	2549.64	0.24	0.00	0.00	2549.39
Pedal H10	16410	76	2807.82	1.97	38.79	3.47	2763.57
Arm H00	0	559	-	-	-	-	-
Rod H00	7874	576	727.64	0.30	7.42	0.51	719.40
Switch H00	7839	661	800.72	0.20	0.00	0.00	800.51
Spring H00	7839	661	800.72	0.20	0.00	0.00	800.51
Pedal H00	3960	4031	4082.27	0.83	31.15	3.50	4046.77
Box Pedal XC	1269	0	0.07	0.07	0.00	0.00	0.00
Box Pedal H10	1089	0	0.12	0.12	0.00	0.00	0.00
Box Pedal H00	523	0	0.12	0.12	0.00	0.00	0.00
Brake pedal XC	503	0	10.28	0.00	0.00	0.00	10.28
Brake pedal H10	547	0	10.29	0.12	0.00	0.00	10.17
Brake pedal H00	132	132	3308.70	0.12	0.00	0.00	3308.58
pengiriman	22	0	0.00	0.00	0.00	0.00	0.00

ENTITY STATES BY PERCENTAGE

Entity Name	% In Move Logic	% Wait For Res, etc.	% In Operation	% Blocked
Boss	0.01	0.00	0.00	99.99
Brake shoe	0.06	0.30	0.01	99.63
Arm XC	-	-	-	-
Rod XC	0.03	0.61	0.02	99.34
Switch XC	0.01	0.00	0.00	99.99
Spring XC	0.01	0.00	0.00	99.99
Pedal XC	0.02	0.97	0.10	98.91
Box Arm XC	100.00	0.00	0.00	0.00
Box Rod XC	100.00	0.00	0.00	0.00
Box Switch XC	100.00	0.00	0.00	0.00
Box Spring XC	100.00	0.00	0.00	0.00

Box Boss	100.00	0.00	0.00	0.00
Box Shoe	100.00	0.00	0.00	0.00
Box Arm H10	100.00	0.00	0.00	0.00
Box Rod H10	100.00	0.00	0.00	0.00
Box Switch H10	100.00	0.00	0.00	0.00
Box Spring H10	100.00	0.00	0.00	0.00
Box Arm H00	100.00	0.00	0.00	0.00
Box Rod H00	100.00	0.00	0.00	0.00
Box Switch H00	100.00	0.00	0.00	0.00
Box Spring H00	100.00	0.00	0.00	0.00
Arm H10	-	-	-	-
Rod H10	0.01	0.27	0.02	99.69
Switch H10	0.01	0.00	0.00	99.99
Spring H10	0.01	0.00	0.00	99.99
Pedal H10	0.07	1.38	0.12	98.42
Arm H00	-	-	-	-
Rod H00	0.04	1.02	0.07	98.87
Switch H00	0.03	0.00	0.00	99.97
Spring H00	0.03	0.00	0.00	99.97
Pedal H00	0.02	0.76	0.09	99.13
Box Pedal XC	100.00	0.00	0.00	0.00
Box Pedal H10	100.00	0.00	0.00	0.00
Box Pedal H00	100.00	0.00	0.00	0.00
Brake pedal XC	0.00	0.00	0.00	100.00
Brake pedal H10	1.20	0.00	0.00	98.80
Brake pedal H00	0.00	0.00	0.00	100.00
pengiriman	-	-	-	-

VARIABLES

Variable Name	Total Changes	Average Minutes Per Change	Minimum Value	Maximum Value	Current Value	Average Value
kekurangan XC	22	420.00	0	12	11	10.63
kekurangan H10	20	462.00	0	2	2	1.13
kekurangan H00	0	0.00	0	0	0	0
jml XC	547	16.89	-12	26	0	11.40
jml H10	586	15.76	-2	27	0	12.46
jml H00	286	32.30	0	138	132	84.91
status XC	0	0.00	0	0	0	0
ruleroute XC	11	27.67	0	1	0	1.07
henti XC	9	62.96	0	1	0	0.02
status H10	0	0.00	0	0	0	0
ruleroute H10	58	138.58	0	1	0	5.09
henti H10	43	197.28	0	1	0	0.28
status H00	0	0.00	0	0	0	0
ruleroute H00	0	0.00	0	0	0	0

henti H00	0	0.00	0	0	0	0
jml arm XC	46244	0.19	0	1327	16	291.83
jml arm H10	34039	0.27	0	1571	1301	1151.46
jml arm H00	16304	0.56	0	1111	556	214.45
total kurang XC	22	420.00	0	245	245	115.63
total kurang H10	20	462.00	0	25	25	11.36
total kurang H00	0	0.00	0	0	0	0
hyd	66000	0.13	0	1498	0	523.93
in 63 1	55590	0.16	0	11014	10710	5577.38
in 90 1	45060	0.20	0	119	0	11.29
in pedalXC	38073	0.24	0	8135	8127	4180.21
in ex	78953	0.11	0	395	67	79.14
in 35	71428	0.12	0	11981	9572	4795.99
in bend 100	47040	0.19	0	1800	0	210.93
in 63 3	40560	0.22	0	6662	6660	3897.73
in cut 100	34020	0.27	0	90	0	8.19
in pedalH10	32687	0.28	0	30	13	13.81
in blank 2	15240	0.60	0	1620	0	323.19
in 63 2	15480	0.59	0	118	0	2.69
in 90 2	15660	0.58	0	101	0	3.22
in pedalH00	15699	0.58	0	35	21	7.90

LAMPIRAN 6

- **INPUT SIMULASI USULAN**
- **OUTPUT SIMULASI USULAN**

INPUT SIMULASI USULAN

```
*******************************************************************************
*                                                                             *
*                        Formatted Listing of Model:                          *
*              D:\Lina's Document\TA\Usulan.MOD                               *
*                                                                             *
*******************************************************************************

  Time Units:                       Minutes
  Distance Units:                   Feet
  Initialization Logic:


*******************************************************************************
*                                 Locations                                   *
*******************************************************************************

  Name           Cap Units Stats       Rules           Cost
  -------------- --- ----- ----------- --------------- ------------
  Ms_Forging     1   1     Time Series Oldest, ,
  Ms_Blank1      1   1     Time Series Oldest, ,
  Ms_Pie25_1     2   1     Time Series Oldest, ,
  Ms_Hyd         2   1     Time Series Oldest, ,
  Ms_Pie63_1     2   1     Time Series Oldest, ,
  Ms_Cut90_1     1   1     Time Series Oldest, ,
  Ms_Blank2      1   1     Time Series Oldest, ,
  Ms_Pie25_2     2   1     Time Series Oldest, ,
  Ms_Pie25_3     2   1     Time Series Oldest, ,
  Ms_Bend35      2   1     Time Series Oldest, ,
  Ms_Bend35_2    2   1     Time Series Oldest, ,
  Ms_Bend100     1   1     Time Series Oldest, ,
  Ms_Pie63_3     2   1     Time Series Oldest, ,
  Ms_Cut100      1   1     Time Series Oldest, ,
  Ms_Pie63_2     2   1     Time Series Oldest, ,
  Ms_Cut90_2     1   1     Time Series Oldest, ,
  Assy1_XC       1   3     Time Series Oldest, , First
  Assy1_XC.1     1   1     Time Series Oldest, ,
  Assy1_XC.2     1   1     Time Series Oldest, ,
  Assy1_XC.3     1   1     Time Series Oldest, ,
  Assy1_H10      1   3     Time Series Oldest, , First
  Assy1_H10.1    1   1     Time Series Oldest, ,
  Assy1_H10.2    1   1     Time Series Oldest, ,
  Assy1_H10.3    1   1     Time Series Oldest, ,
  Assy1_H00      1   3     Time Series Oldest, , First
```

```
Assy1_H00.1    1   1     Time Series Oldest, ,
Assy1_H00.2    1   1     Time Series Oldest, ,
Assy1_H00.3    1   1     Time Series Oldest, ,
Assy2_XC       1   1     Time Series Oldest, ,
Assy2_H10      1   1     Time Series Oldest, ,
Assy2_H00      1   1     Time Series Oldest, ,
Ms_Expand      1   1     Time Series Oldest, ,
Receiving_Area INF 1     Time Series Oldest, ,
WIP            INF 1     Time Series Oldest, ,
in_forging     INF 1     Time Series Oldest, ,
in_blank1      INF 1     Time Series Oldest, ,
in_blank2      INF 1     Time Series Oldest, ,
in_pie25_1     INF 1     Time Series Oldest, ,
in_pie25_2     INF 1     Time Series Oldest, ,
in_pie25_3     INF 1     Time Series Oldest, ,
in_Hyd         INF 1     Time Series Oldest, ,
in_bend35      INF 1     Time Series Oldest, ,
in_bend100     INF 1     Time Series Oldest, ,
in_cut100      INF 1     Time Series Oldest, ,
in_cut90_1     INF 1     Time Series Oldest, ,
in_cut90_2     INF 1     Time Series Oldest, ,
in_pie63_1     INF 1     Time Series Oldest, ,
in_pie63_2     INF 1     Time Series Oldest, ,
in_pie63_3     INF 1     Time Series Oldest, ,
in_Arm_XC      INF 1     Time Series Oldest, ,
in_Rod_XC      INF 1     Time Series Oldest, ,
in_Boss_XC     INF 1     Time Series Oldest, ,
in_Shoe_XC     INF 1     Time Series Oldest, ,
in_Arm_H10     INF 1     Time Series Oldest, ,
in_Rod_H10     INF 1     Time Series Oldest, ,
in_Boss_H10    INF 1     Time Series Oldest, ,
in_Shoe_H10    INF 1     Time Series Oldest, ,
in_Arm_H00     INF 1     Time Series Oldest, ,
in_Rod_H00     INF 1     Time Series Oldest, ,
in_Boss_H00    INF 1     Time Series Oldest, ,
in_Shoe_H00    INF 1     Time Series Oldest, ,
in_switch_XC   INF 1     Time Series Oldest, ,
in_spring_XC   INF 1     Time Series Oldest, ,
in_Pedal_XC    INF 1     Time Series Oldest, ,
in_switch_H10  INF 1     Time Series Oldest, ,
in_spring_H10  INF 1     Time Series Oldest, ,
in_Pedal_H10   INF 1     Time Series Oldest, ,
in_switch_H00  INF 1     Time Series Oldest, ,
in_spring_H00  INF 1     Time Series Oldest, ,
in_Pedal_H00   INF 1     Time Series Oldest, ,
in_expand      INF 1     Time Series Oldest, ,
out_forging    INF 1     Time Series Oldest, ,
out_blank1     INF 1     Time Series Oldest, ,
out_blank2     INF 1     Time Series Oldest, ,
```

```
  out_pie25_1    INF 1     Time Series Oldest, ,
  out_pie25_2    INF 1     Time Series Oldest, ,
  out_pie25_3    INF 1     Time Series Oldest, ,
  out_Hyd        INF 1     Time Series Oldest, ,
  out_bend35     INF 1     Time Series Oldest, ,
  out_bend100    INF 1     Time Series Oldest, ,
  out_cut100     INF 1     Time Series Oldest, ,
  out_pie63_1    INF 1     Time Series Oldest, ,
  out_pie63_2    INF 1     Time Series Oldest, ,
  out_pie63_3    INF 1     Time Series Oldest, ,
  out_cut90_1    INF 1     Time Series Oldest, ,
  out_cut90_2    INF 1     Time Series Oldest, ,
  out_assy1_XC   INF 1     Time Series Oldest, ,
  out_assy1_H10  INF 1     Time Series Oldest, ,
  out_assy1_H00  INF 1     Time Series Oldest, ,
  out_assy2_XC   INF 1     Time Series Oldest, ,
  out_assy2_H10  INF 1     Time Series Oldest, ,
  out_assy2_H00  INF 1     Time Series Oldest, ,
  out_expand     INF 1     Time Series Oldest, ,
  Shipping_XC    INF 1     Time Series Oldest, ,
  Shipping_H10   INF 1     Time Series Oldest, ,
  Shipping_H00   INF 1     Time Series Oldest, ,
  Shipping       1   1     Time Series Oldest, ,

*****************************************************************************
*                                  Entities                                 *
*****************************************************************************

  Name            Speed (fpm)  Stats       Cost
  --------------- ------------ ----------- ------------
  Boss            150          Time Series
  Brake_shoe      150          Time Series
  Arm_XC          150          Time Series
  Rod_XC          150          Time Series
  Switch_XC       150          Time Series
  Spring_XC       150          Time Series
  Pedal_XC        150          Time Series
  Box_Arm_XC      150          Time Series
  Box_Rod_XC      150          Time Series
  Box_Switch_XC   150          Time Series
  Box_Spring_XC   150          Time Series
  Box_Boss        150          Time Series
  Box_Shoe        150          Time Series
  Box_Arm_H10     150          Time Series
  Box_Rod_H10     150          Time Series
  Box_Switch_H10  150          Time Series
  Box_Spring_H10  150          Time Series
  Box_Arm_H00     150          Time Series
```

Box_Rod_H00	150	Time Series
Box_Switch_H00	150	Time Series
Box_Spring_H00	150	Time Series
Arm_H10	150	Time Series
Rod_H10	150	Time Series
Switch_H10	150	Time Series
Spring_H10	150	Time Series
Pedal_H10	150	Time Series
Arm_H00	150	Time Series
Rod_H00	150	Time Series
Switch_H00	150	Time Series
Spring_H00	150	Time Series
Pedal_H00	150	Time Series
Box_Pedal_XC	150	Time Series
Box_Pedal_H10	150	Time Series
Box_Pedal_H00	150	Time Series
Brake_pedal_XC	150	Time Series
Brake_pedal_H10	150	Time Series
Brake_pedal_H00	150	Time Series
pengiriman	150	Time Series

****
*
Path Networks
*
****

Name	Type	T/S	From	To	BI	Dist/Time	Speed Factor
WIP_to_assy1_XC	Passing	Time	N1	N2	Bi	W(14.9, 12) sec	
WIP_to_assy1_H10	Passing	Time	N1	N2	Bi	W(8.21, 12.6) sec	
WIP_to_assy1_H00	Passing	Time	N1	N2	Bi	W(4.8, 7.19) sec	
Forg_to_WIP	Passing	Time	N1	N2	Bi	W(12, 16.3) sec	
assy2_XC_to_exp	Passing	Time	N1	N2	Bi	W(8.56, 7.35) sec	
assy2_H10_to_exp	Passing	Time	N1	N2	Bi	W(5.21, 10.2) sec	
assy2_H00_to_exp	Passing	Time	N1	N2	Bi	W(7.92, 12.4) sec	
WIP_to_assy2_XC	Passing	Time	N1	N2	Bi	W(18.4, 17.8) sec	
WIP_to_assy2_H10	Passing	Time	N1	N2	Bi	W(21.1, 15.3) sec	
WIP_to_assy2_H00	Passing	Time	N1	N2	Bi	W(8.95, 13) sec	
pie25_1_to_WIP	Passing	Time	N1	N2	Bi	W(14, 12.7) sec	
exp_to_gudang	Passing	Time	N1	N2	Bi	W(7.85, 7.9) sec	
pie25_2_to_WIP	Passing	Time	N1	N2	Bi	W(8.98, 7.4) sec	
bend35_to_blank	Passing	Time	N1	N2	Bi	W(4.03, 5.64) sec	
blank_to_pie63_2	Passing	Time	N1	N2	Bi	W(7.52, 9.86) sec	

```
*******************************************************************************
*                                  Interfaces                                 *
*******************************************************************************

  Net               Node       Location
  ----------------- ---------- -------------
  WIP_to_assy1_XC   N1         WIP
                    N2         in_Arm_XC
                    N2         in_Rod_XC
                    N2         in_Boss_XC
                    N2         in_Shoe_XC
  WIP_to_assy1_H10  N1         WIP
                    N2         in_Arm_H10
                    N2         in_Rod_H10
                    N2         in_Boss_H10
                    N2         in_Shoe_H10
  WIP_to_assy1_H00  N1         WIP
                    N2         in_Arm_H00
                    N2         in_Rod_H00
                    N2         in_Boss_H00
                    N2         in_Shoe_H00
  Forg_to_WIP       N1         out_forging
                    N2         WIP
  assy2_XC_to_exp   N1         out_assy2_XC
                    N2         in_expand
  assy2_H10_to_exp  N1         out_assy2_H10
                    N2         in_expand
  assy2_H00_to_exp  N1         out_assy2_H00
                    N2         in_expand
  WIP_to_assy2_XC   N1         WIP
                    N2         in_switch_XC
                    N2         in_spring_XC
                    N2         in_Pedal_XC
  WIP_to_assy2_H10  N1         WIP
                    N2         in_switch_H10
                    N2         in_spring_H10
                    N2         in_Pedal_H10
  WIP_to_assy2_H00  N1         WIP
                    N2         in_switch_H00
                    N2         in_spring_H00
                    N2         in_Pedal_H00
  pie25_1_to_WIP    N1         out_pie25_1
                    N2         WIP
  exp_to_gudang     N1         out_expand
                    N2         Shipping_XC
                    N2         Shipping_H10
                    N2         Shipping_H00
  pie25_2_to_WIP    N1         out_pie25_2
                    N2         WIP
```

```
  bend35_to_blank  N1         out_bend35
                   N2         in_blank2
  blank_to_pie63_2 N1         out_blank2
                   N2         in_pie63_2

*****************************************************************************
*                              Processing                                   *
*****************************************************************************

                                       Process                          Routing

 Entity          Location       Operation            Blk  Output          Destination   Rule     Move Logic
 --------------- -------------- -----------------    ---- --------------- ------------- -------  ------------
 Brake_shoe      Receiving_Area GROUP 50 AS Box_Shoe
 Box_Shoe        Receiving_Area                      1    Box_Shoe        in_forging    FIRST 1  MOVE FOR W(5.46, 3.01) SEC
 Box_Shoe        in_forging     UNGROUP
                                RENAME Brake_shoe
 Brake_shoe      in_forging                          1    Brake_shoe      Ms_Forging    FIRST 1
 Brake_shoe      Ms_Forging     WAIT W(5.9, 6.33) SEC
                                                    1    Brake_shoe      out_forging   FIRST 1  GRAPHIC 2
 Brake_shoe      out_forging    GROUP 50 AS Box_Shoe
 Box_Shoe        out_forging                         1    Box_Shoe        WIP           FIRST 1  MOVE ON Forg_to_WIP
 Brake_shoe      WIP            GROUP 50 AS Box_Shoe
 Box_Shoe        WIP                                 1    Box_Shoe        in_Shoe_XC    MOST 1   MOVE ON WIP_to_assy1_XC
                                                          Box_Shoe        in_Shoe_H10   MOST     MOVE ON WIP_to_assy1_H10
                                                          Box_Shoe        in_Shoe_H00   MOST     MOVE ON WIP_to_assy1_H00
 Box_Shoe        in_Shoe_XC     UNGROUP
                                RENAME Brake_shoe
                                GRAPHIC 2
 Brake_shoe      in_Shoe_XC                          1    Brake_shoe      Assy1_XC      JOIN 1
 Box_Shoe        in_Shoe_H10    UNGROUP
                                RENAME Brake_shoe
                                GRAPHIC 2
 Brake_shoe      in_Shoe_H10                         1    Brake_shoe      Assy1_H10     JOIN 1
 Box_Shoe        in_Shoe_H00    UNGROUP
                                RENAME Brake_shoe
                                GRAPHIC 2
```

```
Brake_shoe      in_Shoe_H00                         1    Brake_shoe      Assy1_H00     JOIN 1
Boss            WIP           GROUP 30 AS Box_Boss

Box_Boss        WIP                                 1    Box_Boss        in_Boss_XC    MOST 1   MOVE ON WIP_to_assy1_XC
                                                         Box_Boss        in_Boss_H10   MOST     MOVE ON WIP_to_assy1_H10
                                                         Box_Boss        in_Boss_H00   MOST     MOVE ON WIP_to_assy1_H00

Box_Boss        in_Boss_XC    UNGROUP
                              RENAME Boss

Boss            in_Boss_XC                          1    Boss            Assy1_XC      JOIN 1
Box_Boss        in_Boss_H10   UNGROUP
                              RENAME Boss

Boss            in_Boss_H10                         1    Boss            Assy1_H10     JOIN 1
Box_Boss        in_Boss_H00   UNGROUP
                              RENAME Boss

Boss            in_Boss_H00                         1    Boss            Assy1_H00     JOIN 1
Switch_XC       WIP           GROUP 50 AS Box_Switch_XC

Box_Switch_XC   WIP                                 1    Box_Switch_XC   in_switch_XC  FIRST 1  MOVE ON WIP_to_assy2_XC

Box_Switch_XC   in_switch_XC  UNGROUP
                              RENAME Switch_XC

Switch_XC       in_switch_XC                        1    Switch_XC       Assy2_XC      JOIN 1
Spring_XC       WIP           GROUP 50 AS Box_Spring_XC

Box_Spring_XC   WIP                                 1    Box_Spring_XC   in_spring_XC  FIRST 1  MOVE ON WIP_to_assy2_XC

Box_Spring_XC   in_spring_XC  UNGROUP
                              RENAME Spring_XC

Spring_XC       in_spring_XC                        1    Spring_XC       Assy2_XC      JOIN 1
Rod_XC          Receiving_Area GROUP 50 AS Box_Rod_XC

Box_Rod_XC      Receiving_Area                      1    Box_Rod_XC      in_blank1     FIRST 1  MOVE FOR W(3.85, 3.75) SEC

Box_Rod_XC      in_blank1     UNGROUP
                              RENAME Rod_XC

Rod_XC          in_blank1                           1    Rod_XC          Ms_Blank1     FIRST 1
Rod_XC          Ms_Blank1     WAIT W(3.68, 4.16) SEC
```

```
                                                1    Rod_XC          out_blank1    FIRST 1  GRAPHIC 2

Rod_XC          out_blank1     GROUP 50 AS Box_Rod_XC
Box_Rod_XC      out_blank1                      1    Box_Rod_XC      in_pie25_1    FIRST 1  MOVE FOR W(5.83, 3.44) SEC


Box_Rod_XC      in_pie25_1     UNGROUP
                               RENAME Rod_XC
                               GRAPHIC 2

Rod_XC          in_pie25_1                      1    Rod_XC          Ms_Pie25_1    FIRST 1
Rod_XC          Ms_Pie25_1     WAIT W(8.97, 16.5) SEC
                                                1    Rod_XC          out_pie25_1   FIRST 1  GRAPHIC 3

Rod_XC          out_pie25_1    GROUP 50 AS Box_Rod_XC
Box_Rod_XC      out_pie25_1                     1    Box_Rod_XC      WIP           FIRST 1  MOVE ON pie25_1_to_WIP

Rod_XC          WIP            GROUP 50 AS Box_Rod_XC
Box_Rod_XC      WIP                             1    Box_Rod_XC      in_Rod_XC     FIRST 1  MOVE ON WIP_to_assy1_XC
Box_Rod_XC      in_Rod_XC      UNGROUP
                               RENAME Rod_XC
                               GRAPHIC 3

Rod_XC          in_Rod_XC                       1    Rod_XC          Assy1_XC      JOIN 1
Arm_XC          Receiving_Area GROUP 30 AS Box_Arm_XC

Box_Arm_XC      Receiving_Area                  1    Box_Arm_XC      in_Hyd        FIRST 1  MOVE FOR W(4.67, 3.32) SEC

Box_Arm_XC      in_Hyd         UNGROUP
                               RENAME Arm_XC

Arm_XC          in_Hyd         INC hyd
                                                1    Arm_XC          Ms_Hyd        FIRST 1  DEC hyd

Arm_XC          Ms_Hyd         WAIT W(16, 24.3) SEC
                               IF jml_pedal_XC < buffer_XC AND ruleroute_XC = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_XC = 0
                                ROUTE 2
                               }
                                                1    Arm_XC          out_Hyd       FIRST 1  GRAPHIC 2


                                                2    Arm_XC          out_Hyd       SEND 1   GRAPHIC 2
```

```
Arm_XC          out_Hyd         GROUP 30 AS Box_Arm_XC

Box_Arm_XC      out_Hyd                         1    Box_Arm_XC      in_pie63_1    FIRST 1  MOVE FOR W(6.8, 4.11) SEC


Box_Arm_XC      in_pie63_1      UNGROUP
                                RENAME Arm_XC
                                GRAPHIC 2

Arm_XC          in_pie63_1      INC in_63_1
                                                1    Arm_XC          Ms_Pie63_1    FIRST 1  DEC in_63_1

Arm_XC          Ms_Pie63_1      WAIT W(23, 25.4) SEC
                                IF jml_pedal_XC < buffer_XC AND ruleroute_XC = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_XC = 0
                                 ROUTE 2
                                }
                                                1    Arm_XC          out_pie63_1   FIRST 1  GRAPHIC 3

                                                2    Arm_XC          out_pie63_1   SEND 1   GRAPHIC 3

Arm_XC          out_pie63_1     GROUP 30 AS Box_Arm_XC
Box_Arm_XC      out_pie63_1                     1    Box_Arm_XC      in_cut90_1    FIRST 1  MOVE FOR W(5.06, 3.62) SEC

Box_Arm_XC      in_cut90_1      UNGROUP
                                RENAME Arm_XC
                                GRAPHIC 3

Arm_XC          in_cut90_1      INC in_90_1
                                                1    Arm_XC          Ms_Cut90_1    FIRST 1  DEC in_90_1

Arm_XC          Ms_Cut90_1      WAIT W(5.58, 13.2) SEC
                                IF jml_pedal_XC < buffer_XC AND ruleroute_XC = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_XC = 0
                                 ROUTE 2
                                }

                                                1    Arm_XC          out_cut90_1   FIRST 1  GRAPHIC 4
```

```
                                                2    Arm_XC          out_cut90_1   SEND 1   GRAPHIC 4

Arm_XC          out_cut90_1    GROUP 30 AS Box_Arm_XC
Box_Arm_XC      out_cut90_1                     1    Box_Arm_XC      WIP           FIRST 1  MOVE FOR W(14.6, 6.65) SEC

Arm_XC          WIP            GROUP 30 AS Box_Arm_XC
Box_Arm_XC      WIP                             1    Box_Arm_XC      in_Arm_XC     FIRST 1  MOVE ON WIP_to_assy1_XC

Box_Arm_XC      in_Arm_XC      UNGROUP
                               RENAME Arm_XC
                               GRAPHIC 4

Arm_XC          in_Arm_XC      INC jml_arm_XC
                                                1    Arm_XC          Assy1_XC      FIRST 1  DEC jml_arm_XC

Arm_XC          Assy1_XC       JOIN 1 Rod_XC
                               JOIN 1 Boss
                               JOIN 1 Brake_shoe
                               WAIT W(15.3, 73.3) SEC
                               IF jml_pedal_XC < buffer_XC AND ruleroute_XC = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_XC = 0
                                ROUTE 2
                               }
                                                1    Pedal_XC        out_assy1_XC  FIRST 1
                                                2    Pedal_XC        out_assy1_XC  SEND 1
Pedal_XC        out_assy1_XC   GROUP 30 AS Box_Pedal_XC

Box_Pedal_XC    out_assy1_XC                    1    Box_Pedal_XC    in_Pedal_XC   FIRST 1  MOVE FOR W(4.58, 2.98) SEC

Box_Pedal_XC    in_Pedal_XC    UNGROUP
                               RENAME Pedal_XC

Pedal_XC        in_Pedal_XC    INC jml_pedal_XC

                               IF jml_pedal_XC >= buffer_XC THEN
                               {
                                ruleroute_XC = 1
                                henti_XC = 1
                               }
                                                1    Pedal_XC        Assy2_XC      FIRST 1  DEC jml_pedal_XC
                                                                                            IF (jml_pedal_XC = buffer_XC/3) AND
(henti_XC = 1) THEN
                                                                                            {
```

```
                                                                                                          SEND 1 Arm_XC TO out_cut90_1
                                                                                                          SEND 1 Arm_XC TO out_pie63_1
                                                                                                          SEND 1 Arm_XC TO out_Hyd
                                                                                                          SEND 3 Pedal_XC TO out_assy1_XC
                                                                                                          henti_XC = 0
                                                                                                          ruleroute_XC = 0
                                                                                                         }

Pedal_XC         Assy2_XC        JOIN 1 Spring_XC
                                 JOIN 1 Switch_XC
                                 WAIT W(11.1, 38.7) SEC
                                                      1    Pedal_XC         out_assy2_XC  FIRST 1  GRAPHIC 2

Pedal_XC         out_assy2_XC    GROUP 30 AS Box_Pedal_XC
Box_Pedal_XC     out_assy2_XC                         1    Box_Pedal_XC     in_expand     FIRST 1  MOVE ON assy2_XC_to_exp

Box_Pedal_XC     in_expand       UNGROUP
                                 RENAME Pedal_XC
                                 GRAPHIC 2

Pedal_XC         in_expand       INC in_ex
                                                      1    Pedal_XC         Ms_Expand     FIRST 1  DEC in_ex

Pedal_XC         Ms_Expand       WAIT W(7.44, 12.8) SEC
                                                      1    Pedal_XC         out_expand    FIRST 1  GRAPHIC 2

Pedal_XC         out_expand      GROUP 30 AS Brake_pedal_XC
Brake_pedal_XC   out_expand                           1    Brake_pedal_XC   Shipping_XC   FIRST 1
Brake_pedal_XC   Shipping_XC     INC jml_XC
                                                      1    Brake_pedal_XC   EXIT          SEND 1
Switch_H10       WIP             GROUP 50 AS Box_Switch_H10

Box_Switch_H10   WIP                                  1    Box_Switch_H10   in_switch_H10 FIRST 1  MOVE ON WIP_to_assy2_H10

Box_Switch_H10   in_switch_H10   UNGROUP
                                 RENAME Switch_H10

Switch_H10       in_switch_H10                        1    Switch_H10       Assy2_H10     JOIN 1
Spring_H10       WIP             GROUP 50 AS Box_Spring_H10

Box_Spring_H10   WIP                                  1    Box_Spring_H10   in_spring_H10 FIRST 1  MOVE ON WIP_to_assy2_H10

Box_Spring_H10   in_spring_H10   UNGROUP
                                 RENAME Spring_H10

Spring_H10       in_spring_H10                        1    Spring_H10       Assy2_H10     JOIN 1
Rod_H10          Receiving_Area GROUP 50 AS Box_Rod_H10

Box_Rod_H10      Receiving_Area                       1    Box_Rod_H10      in_blank2     FIRST 1
```

```
Box_Rod_H10     in_blank2       UNGROUP
                                RENAME Rod_H10

Rod_H10         in_blank2                       1   Rod_H10         Ms_Blank2,3   FIRST 1
Rod_H10         Ms_Blank2       WAIT W(6.73, 5.52) SEC
                                                1   Rod_H10         out_blank2    FIRST 1  GRAPHIC 2

Rod_H10         out_blank2      GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_blank2                      1   Box_Rod_H10     in_pie25_3    FIRST 1  MOVE FOR W(4.45, 3.15) SEC

Box_Rod_H10     in_pie25_3      UNGROUP
                                RENAME Rod_H10
                                GRAPHIC 2

Rod_H10         in_pie25_3                      1   Rod_H10         Ms_Pie25_3,2  FIRST 1
Rod_H10         Ms_Pie25_3      WAIT W(7.01, 14.6) SEC
                                                1   Rod_H10         out_pie25_3   FIRST 1  GRAPHIC 3

Rod_H10         out_pie25_3     GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_pie25_3                     1   Box_Rod_H10     in_pie25_2    FIRST 1  MOVE FOR W(3.93, 3.27) SEC

Box_Rod_H10     in_pie25_2      UNGROUP
                                RENAME Rod_H10
                                GRAPHIC 3

Rod_H10         in_pie25_2                      1   Rod_H10         Ms_Pie25_2,2  FIRST 1
Rod_H10         Ms_Pie25_2      WAIT W(9.69, 15) SEC
                                                1   Rod_H10         out_pie25_2   FIRST 1  GRAPHIC 3

Rod_H10         out_pie25_2     GROUP 50 AS Box_Rod_H10

Box_Rod_H10     out_pie25_2                     1   Box_Rod_H10     WIP           FIRST 1  MOVE ON pie25_2_to_WIP

Rod_H10         WIP             GROUP 50 AS Box_Rod_H10
Box_Rod_H10     WIP                             1   Box_Rod_H10     in_Rod_H10    FIRST 1  MOVE ON WIP_to_assy1_H10

Box_Rod_H10     in_Rod_H10      UNGROUP
                                RENAME Rod_H10
                                GRAPHIC 3

Rod_H10         in_Rod_H10                      1   Rod_H10         Assy1_H10     JOIN 1
Arm_H10         Receiving_Area  GROUP 30 AS Box_Arm_H10

Box_Arm_H10     Receiving_Area                  1   Box_Arm_H10     in_bend35     FIRST 1  MOVE FOR W(4.13, 4.43) SEC

Box_Arm_H10     in_bend35       UNGROUP
                                RENAME Arm_H10
```

```
Arm_H10         in_bend35      INC in_35
                                                1    Arm_H10         Ms_Bend35_2   FIRST 1  DEC in_35

Arm_H10         Ms_Bend35_2    WAIT W(16.8, 19.4) SEC
                               IF jml_arm_H10 < buffer_H10 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H10 = 0
                                ROUTE 2
                               }
                                                1    Arm_H10         out_bend35    FIRST 1  GRAPHIC 2

                                                2    Arm_H10         out_bend35    SEND 1   GRAPHIC 2

Arm_H10         out_bend35     GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_bend35                      1    Box_Arm_H10     in_bend100    FIRST 1  MOVE FOR W(8.74, 78) SEC

Box_Arm_H10     in_bend100     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 2

Arm_H10         in_bend100     INC in_bend_100
                                                1    Arm_H10         Ms_Bend100    FIRST 1  DEC in_bend_100

Arm_H10         Ms_Bend100     WAIT W(5.34, 13.7) SEC
                               IF jml_arm_H10 < buffer_H10 AND ruleroute_H10 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H10 = 0
                                ROUTE 2
                               }
                                                1    Arm_H10         out_bend100   FIRST 1  GRAPHIC 3
                                                2    Arm_H10         out_bend100   SEND 1   GRAPHIC 3
Arm_H10         out_bend100    GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_bend100                     1    Box_Arm_H10     in_pie63_3    FIRST 1  MOVE FOR W(2.28, 3.77) SEC

Box_Arm_H10     in_pie63_3     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 3
```

```
Arm_H10         in_pie63_3      INC in_63_3
                                                1    Arm_H10         Ms_Pie63_3    FIRST 1  DEC in_63_3

Arm_H10         Ms_Pie63_3      WAIT W(18.1, 25) SEC
                                IF jml_arm_H10 < buffer_H10 AND ruleroute_H10 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H10 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H10         out_pie63_3   FIRST 1  GRAPHIC 4

                                                2    Arm_H10         out_pie63_3   SEND 1   GRAPHIC 4

Arm_H10         out_pie63_3     GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_pie63_3                     1    Box_Arm_H10     in_cut100     FIRST 1  MOVE FOR W(5.81, 2.56) SEC

Box_Arm_H10     in_cut100       UNGROUP
                                RENAME Arm_H10
                                GRAPHIC 4

Arm_H10         in_cut100       INC in_cut_100
                                                1    Arm_H10         Ms_Cut100     FIRST 1  DEC in_cut_100

Arm_H10         Ms_Cut100       WAIT W(5.88, 12.9) SEC
                                IF jml_arm_H10 < buffer_H10 AND ruleroute_H10 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H10 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H10         out_cut100    FIRST 1  GRAPHIC 5

                                                2    Arm_H10         out_cut100    SEND 1   GRAPHIC 5

Arm_H10         out_cut100      GROUP 30 AS Box_Arm_H10

Box_Arm_H10     out_cut100                      1    Box_Arm_H10     WIP           FIRST 1  MOVE FOR W(7.62, 7.15) SEC

Arm_H10         WIP             GROUP 30 AS Box_Arm_H10

Box_Arm_H10     WIP                             1    Box_Arm_H10     in_Arm_H10    FIRST 1  MOVE ON WIP_to_assy1_H10
```

```
Box_Arm_H10     in_Arm_H10     UNGROUP
                               RENAME Arm_H10
                               GRAPHIC 5

Arm_H10         in_Arm_H10     INC jml_arm_H10
                               IF jml_arm_H10 >= buffer_H10 THEN
                               {
                                ruleroute_H10 = 1
                                henti_H10 = 1
                               }
                                                    1    Arm_H10         Assy1_H10     FIRST 1  IF (jml_arm_H10 = buffer_H10/3) AND
(henti_H10 = 1) THEN
                                                                                                {
                                                                                                 SEND 1 Arm_H10 TO out_cut100
                                                                                                 SEND 1 Arm_H10 TO out_pie63_3
                                                                                                 SEND 1 Arm_H10 TO out_bend100
                                                                                                 SEND 1 Arm_H10 TO out_bend35
                                                                                                 henti_H10 = 0
                                                                                                }

                                                                                                DEC jml_arm_H10

Arm_H10         Assy1_H10      JOIN 1 Boss
                               JOIN 1 Brake_shoe
                               JOIN 1 Rod_H10
                               WAIT W(41.4, 103) SEC
                                                    1    Pedal_H10       out_assy1_H10 FIRST 1
Pedal_H10       out_assy1_H10  GROUP 30 AS Box_Pedal_H10

Box_Pedal_H10   out_assy1_H10                       1    Box_Pedal_H10   in_Pedal_H10  FIRST 1  MOVE FOR W(6.47, 5.9) SEC

Box_Pedal_H10   in_Pedal_H10   UNGROUP
                               RENAME Pedal_H10

Pedal_H10       in_Pedal_H10   INC in_pedalH10
                                                    1    Pedal_H10       Assy2_H10     FIRST 1  DEC in_pedalH10

Pedal_H10       Assy2_H10      JOIN 1 Spring_H10
                               JOIN 1 Switch_H10
                               WAIT W(17.5, 33.3) SEC
                                                    1    Pedal_H10       out_assy2_H10 FIRST 1  GRAPHIC 2

Pedal_H10       out_assy2_H10  GROUP 30 AS Box_Pedal_H10

Box_Pedal_H10   out_assy2_H10                       1    Box_Pedal_H10   in_expand     FIRST 1  MOVE ON assy2_H10_to_exp
Box_Pedal_H10   in_expand      UNGROUP
                               RENAME Pedal_H10
                               GRAPHIC 2
```

```
Pedal_H10       in_expand      INC in_ex
                                                1    Pedal_H10       Ms_Expand     FIRST 1  DEC in_ex

Pedal_H10       Ms_Expand      WAIT W(7.44, 12.8) SEC
                                                1    Pedal_H10       out_expand    FIRST 1  GRAPHIC 2

Pedal_H10       out_expand     GROUP 30 AS Brake_pedal_H10

Brake_pedal_H10 out_expand                      1    Brake_pedal_H10 Shipping_H10  FIRST 1  MOVE ON exp_to_gudang

Brake_pedal_H10 Shipping_H10   INC jml_H10
                                                1    Brake_pedal_H10 EXIT          SEND 1
Switch_H00      WIP            GROUP 50 AS Box_Switch_H00

Box_Switch_H00  WIP                             1    Box_Switch_H00  in_switch_H00 FIRST 1  MOVE ON WIP_to_assy2_H00
Box_Switch_H00  in_switch_H00  UNGROUP
                               RENAME Switch_H00

Switch_H00      in_switch_H00                   1    Switch_H00      Assy2_H00     JOIN 1
Spring_H00      WIP            GROUP 50 AS Box_Spring_H00

Box_Spring_H00  WIP                             1    Box_Spring_H00  in_spring_H00 FIRST 1  MOVE ON WIP_to_assy2_H00
Box_Spring_H00  in_spring_H00  UNGROUP
                               RENAME Spring_H00

Spring_H00      in_spring_H00                   1    Spring_H00      Assy2_H00     JOIN 1
Rod_H00         Receiving_Area GROUP 50 AS Box_Rod_H00

Box_Rod_H00     Receiving_Area                  1    Box_Rod_H00     in_blank2     FIRST 1
Box_Rod_H00     in_blank2      UNGROUP
                               RENAME Rod_H00

Rod_H00         in_blank2                       1    Rod_H00         Ms_Blank2,2   FIRST 1
Rod_H00         Ms_Blank2      WAIT W(5.67, 5.25) SEC
                                                1    Rod_H00         out_blank2    FIRST 1  GRAPHIC 2

Rod_H00         out_blank2     GROUP 50 AS Box_Rod_H00

Box_Rod_H00     out_blank2                      1    Box_Rod_H00     in_pie25_3    FIRST 1  MOVE FOR W(4.45, 3.15) SEC

Box_Rod_H00     in_pie25_3     UNGROUP
                               RENAME Rod_H00
                               GRAPHIC 2

Rod_H00         in_pie25_3                      1    Rod_H00         Ms_Pie25_3,1  FIRST 1
Rod_H00         Ms_Pie25_3     WAIT W(9.92, 14.8) SEC
                                                1    Rod_H00         out_pie25_3   FIRST 1  GRAPHIC 3

Rod_H00         out_pie25_3    GROUP 50 AS Box_Rod_H00
```

```
Box_Rod_H00     out_pie25_3                         1    Box_Rod_H00     in_pie25_2    FIRST 1  MOVE FOR W(3.93, 3.27) SEC

Box_Rod_H00     in_pie25_2      UNGROUP
                                RENAME Rod_H00
                                GRAPHIC 3

Rod_H00         in_pie25_2                          1    Rod_H00         Ms_Pie25_2,1  FIRST 1
Rod_H00         Ms_Pie25_2      WAIT W(9.7, 16) SEC
                                                    1    Rod_H00         out_pie25_2   FIRST 1  GRAPHIC 3

Rod_H00         out_pie25_2     GROUP 50 AS Box_Rod_H00

Box_Rod_H00     out_pie25_2                         1    Box_Rod_H00     WIP           FIRST 1  MOVE ON pie25_2_to_WIP

Rod_H00         WIP             GROUP 50 AS Box_Rod_H00

Box_Rod_H00     WIP                                 1    Box_Rod_H00     in_Rod_H00    FIRST 1  MOVE ON WIP_to_assy1_H00
Box_Rod_H00     in_Rod_H00      UNGROUP
                                RENAME Rod_H00
                                GRAPHIC 3

Rod_H00         in_Rod_H00                          1    Rod_H00         Assy1_H00     JOIN 1
Arm_H00         Receiving_Area  GROUP 30 AS Box_Arm_H00

Box_Arm_H00     Receiving_Area                      1    Box_Arm_H00     in_bend35     FIRST 1  MOVE FOR W(4.13, 4.43) SEC

Box_Arm_H00     in_bend35       UNGROUP
                                RENAME Arm_H00

Arm_H00         in_bend35       INC in_35
                                                    1    Arm_H00         Ms_Bend35     FIRST 1  DEC in_35

Arm_H00         Ms_Bend35       WAIT W(16.8, 19.4)SEC
                                IF jml_arm_H00 < buffer_H00 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                    1    Arm_H00         out_bend35    FIRST 1  GRAPHIC 2

                                                    2    Arm_H00         out_bend35    SEND 1   GRAPHIC 2

Arm_H00         out_bend35      GROUP 30 AS Box_Arm_H00
```

```
Box_Arm_H00     out_bend35                      1    Box_Arm_H00     in_blank2     FIRST 1  MOVE ON bend35_to_blank

Box_Arm_H00     in_blank2       UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 2

Arm_H00         in_blank2       INC in_blank_2
                                                1    Arm_H00         Ms_Blank2,1   FIRST 1  DEC in_blank_2

Arm_H00         Ms_Blank2       WAIT W(11.1, 15.6) SEC
                                IF jml_arm_H00 < buffer_H00 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_blank2    FIRST 1  GRAPHIC 3
                                                2    Arm_H00         out_blank2    SEND 1   GRAPHIC 3
Arm_H00         out_blank2      GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_blank2                      1    Box_Arm_H00     in_pie63_2    FIRST 1  MOVE ON blank_to_pie63_2

Box_Arm_H00     in_pie63_2      UNGROUP
                                RENAME Arm_H00
                                GRAPHIC 3

Arm_H00         in_pie63_2      INC in_63_2
                                                1    Arm_H00         Ms_Pie63_2    FIRST 1  DEC in_63_2

Arm_H00         Ms_Pie63_2      WAIT W(14.4, 27.2) SEC
                                IF jml_arm_H00 < buffer_H00 AND ruleroute_H00 = 0 THEN
                                {
                                 ROUTE 1
                                }
                                 ELSE
                                {
                                 ruleroute_H00 = 0
                                 ROUTE 2
                                }
                                                1    Arm_H00         out_pie63_2   FIRST 1  GRAPHIC 4

                                                2    Arm_H00         out_pie63_2   SEND 1   GRAPHIC 4
```

```
Arm_H00         out_pie63_2    GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_pie63_2                        1    Box_Arm_H00     in_cut90_2    FIRST 1  MOVE FOR W(4.16, 3.52) SEC

Box_Arm_H00     in_cut90_2     UNGROUP
                               RENAME Arm_H00
                               GRAPHIC 4

Arm_H00         in_cut90_2     INC in_90_2
                                                  1    Arm_H00         Ms_Cut90_2    FIRST 1  DEC in_90_2

Arm_H00         Ms_Cut90_2     WAIT W(17.1, 14.8) SEC
                               IF jml_arm_H00 < buffer_H00 AND ruleroute_H00 = 0 THEN
                               {
                                ROUTE 1
                               }
                                ELSE
                               {
                                ruleroute_H00 = 0
                                ROUTE 2
                               }
                                                  1    Arm_H00         out_cut90_2   FIRST 1  GRAPHIC 5

                                                  2    Arm_H00         out_cut90_2   SEND 1   GRAPHIC 5

Arm_H00         out_cut90_2    GROUP 30 AS Box_Arm_H00

Box_Arm_H00     out_cut90_2                        1    Box_Arm_H00     WIP           FIRST 1  MOVE FOR W(8.22, 7.26) SEC

Arm_H00         WIP            GROUP 30 AS Box_Arm_H00

Box_Arm_H00     WIP                                1    Box_Arm_H00     in_Arm_H00    FIRST 1  MOVE ON WIP_to_assy1_H00
Box_Arm_H00     in_Arm_H00     UNGROUP
                               RENAME Arm_H00
                               GRAPHIC 5

Arm_H00         in_Arm_H00     INC jml_arm_H00

                               IF jml_arm_H00 >= buffer_H00 THEN
                               {
                                ruleroute_H00 = 1
                                henti_H00 = 1
                               }

                                                  1    Arm_H00         Assy1_H00     FIRST 1  DEC jml_arm_H00
                                                                                              IF (jml_arm_H00 = buffer_H00/3) AND
(henti_H00 = 1) THEN
                                                                                              {
                                                                                               SEND 1 Arm_H00 TO out_cut90_2
```

```
                                                                                                            SEND 1 Arm_H00 TO out_pie63_2
                                                                                                            SEND 1 Arm_H00 TO out_blank2
                                                                                                            SEND 1 Arm_H00 TO out_bend35
                                                                                                            henti_H00 = 0
                                                                                                           }

Arm_H00         Assy1_H00      JOIN 1 Boss
                               JOIN 1 Brake_shoe
                               JOIN 1 Rod_H00
                               WAIT W(25.6, 111) SEC
                                                     1    Pedal_H00       out_assy1_H00 FIRST 1
Pedal_H00       out_assy1_H00  GROUP 30 AS Box_Pedal_H00

Box_Pedal_H00   out_assy1_H00                        1    Box_Pedal_H00   in_Pedal_H00  FIRST 1  MOVE FOR W(4.55, 3.3) SEC

Box_Pedal_H00   in_Pedal_H00   UNGROUP
                               RENAME Pedal_H00

Pedal_H00       in_Pedal_H00   INC in_pedalH00
                                                     1    Pedal_H00       Assy2_H00     FIRST 1  DEC in_pedalH00

Pedal_H00       Assy2_H00      JOIN 1 Spring_H00
                               JOIN 1 Switch_H00
                               WAIT W(11.2, 37.8) SEC
                                                     1    Pedal_H00       out_assy2_H00 FIRST 1  GRAPHIC 2

Pedal_H00       out_assy2_H00  GROUP 30 AS Box_Pedal_H00

Box_Pedal_H00   out_assy2_H00                        1    Box_Pedal_H00   in_expand     FIRST 1  MOVE ON assy2_H00_to_exp
Box_Pedal_H00   in_expand      UNGROUP
                               RENAME Pedal_H00
                               GRAPHIC 2

Pedal_H00       in_expand      INC in_ex
                                                     1    Pedal_H00       Ms_Expand     FIRST 1  DEC in_ex

Pedal_H00       Ms_Expand      WAIT W(7.44, 12.8) SEC
                                                     1    Pedal_H00       out_expand    FIRST 1  GRAPHIC 2

Pedal_H00       out_expand     GROUP 30 AS Brake_pedal_H00

Brake_pedal_H00 out_expand                           1    Brake_pedal_H00 Shipping_H00  FIRST 1  MOVE ON exp_to_gudang

Brake_pedal_H00 Shipping_H00   INC jml_H00
                                                     1    Brake_pedal_H00 EXIT          SEND 1
pengiriman      Shipping       SEND 34 Brake_pedal_XC TO Exit
                               SEND 26 Brake_pedal_H10 TO Exit
```

```
SEND 6 Brake_pedal_H00 TO Exit

IF jml_XC < 34 THEN
{
kekurangan_XC = 34 - jml_XC
SEND 15 Brake_pedal_XC TO Exit
total_kurang_XC = total_kurang_XC + (34 - jml_XC)
}


IF jml_H10 < 26 THEN
{
kekurangan_H10 = 26 - jml_H10
SEND 13 Brake_pedal_H10 TO Exit
total_kurang_H10 = total_kurang_H10 + (26 - jml_H10)
}


IF jml_H00 < 6 THEN
{
kekurangan_H00 = 6 - jml_H00
SEND 3 Brake_pedal_H00 TO Exit
total_kurang_H00 = total_kurang_H00 + (6 - jml_H00)
}


if total_kurang_XC < 0 then total_kurang_XC = 0
if total_kurang_H10 < 0 then total_kurang_H10 = 0
if total_kurang_H00 < 0 then total_kurang_H00 = 0
                      1    pengiriman      EXIT          FIRST 1  DEC jml_XC, 34
                                                                  DEC jml_H10, 26
                                                                  DEC jml_H00, 6

                                                                  if jml_XC < 0 then jml_XC = 0
                                                                  if jml_H10 < 0 then jml_H10 = 0
                                                                  if jml_H00 < 0 then jml_H00 = 0
```

```
*****************************************************************************
*                                 Arrivals                                  *
*****************************************************************************

  Entity     Location       Qty each   First Time Occurrences Frequency  Logic
  ---------- -------------- ---------- ---------- ----------- ---------- ------------
  Boss       WIP            4500       0          inf         7 hr
  Brake_shoe Receiving_Area 2500       0          INF         7 hr
  Brake_shoe WIP            500        0          1
  Arm_XC     Receiving_Area 1500       0          INF         7 hr
  Arm_XC     in_pie63_1     150        0          1
```

Arm_XC	in_cut90_1	120	0	1		
Arm_XC	WIP	600	0	1		
Pedal_XC	in_expand	150	0	1		
Rod_XC	Receiving_Area	1500	0	INF	7 hr	
Rod_XC	in_pie25_1	90	0	1		
Rod_XC	WIP	500	0	1		
Switch_XC	WIP	1500	0	INF	7 hr	
Spring_XC	WIP	1500	0	inf	7 hr	
Arm_H10	Receiving_Area	1500	0	INF	7 hr	
Arm_H10	in_bend100	120	0	1		
Arm_H10	in_pie63_3	90	0	1		
Arm_H10	in_cut100	90	0	1		
Arm_H10	WIP	660	0	1		
Pedal_H10	in_expand	120	0	1		
Rod_H10	Receiving_Area	1500	0	INF	7 hr	
Rod_H10	in_pie25_3	200	0	1		
Rod_H10	in_pie25_2	150	0	1		
Rod_H10	WIP	500	0	1		
Switch_H10	WIP	1500	0	INF	7 hr	
Spring_H10	WIP	1500	0	INF	7 hr	
Arm_H00	Receiving_Area	1500	1	INF	35 hr	
Arm_H00	in_blank2	120	0	1		
Arm_H00	in_pie63_2	120	0	1		
Arm_H00	in_cut90_2	90	0	1		
Arm_H00	WIP	600	0	1		
Pedal_H00	in_expand	120	0	1		
Rod_H00	Receiving_Area	1500	0	INF	35 hr	
Rod_H00	in_pie25_3	200	0	1		
Rod_H00	in_pie25_2	150	0	1		
Rod_H00	WIP	600	0	1		
Switch_H00	WIP	1500	0	INF	35 hr	
Switch_H00	WIP	1000	0	1		
Spring_H00	WIP	1500	0	INF	35 hr	
Spring_H00	WIP	1000	0	1		
pengiriman	Shipping	1	7 hr	INF	7 hr	

****
* Variables (global) *
****

ID	Type	Initial value	Stats
kekurangan_XC	Integer	0	Time Series
kekurangan_H10	Integer	0	Time Series
kekurangan_H00	Integer	0	Time Series
jml_XC	Integer	0	Time Series
jml_H10	Integer	0	Time Series
jml_H00	Integer	0	Time Series

status_XC	Integer	0	Time Series
ruleroute_XC	Integer	0	Time Series
henti_XC	Integer	0	Time Series
status_H10	Integer	0	Time Series
ruleroute_H10	Integer	0	Time Series
henti_H10	Integer	0	Time Series
status_H00	Integer	0	Time Series
ruleroute_H00	Integer	0	Time Series
henti_H00	Integer	0	Time Series
jml_pedal_XC	Integer	0	Time Series
jml_arm_H10	Integer	0	Time Series
jml_arm_H00	Integer	0	Time Series
jml_arm_XC	Integer	0	Time Series
total_kurang_XC	Integer	0	Time Series
total_kurang_H10	Integer	0	Time Series
total_kurang_H00	Integer	0	Time Series
hyd	Integer	0	Time Series
in_63_1	Integer	0	Time Series
in_90_1	Integer	0	Time Series
in_35	Integer	0	Time Series
in_bend_100	Integer	0	Time Series
in_63_3	Integer	0	Time Series
in_cut_100	Integer	0	Time Series
in_blank_2	Integer	0	Time Series
in_63_2	Integer	0	Time Series
in_90_2	Integer	0	Time Series
in_ex	Integer	0	Time Series
in_pedalH10	Integer	0	Time Series
in_pedalH00	Integer	0	Time Series

****
* Macros *
****

ID	Text
buffer_XC	90
buffer_H10	90
buffer_H00	60

OUTPUT SIMULASI USULAN

General Report
Output from D:\Lina's Document\TA\Usulan 5.MOD
Date: Apr/18/2008 Time: 10:44:55 AM

Scenario : Normal Run
Replication : 1 of 1
Simulation Time : 154 hr

LOCATIONS

Location Name	Scheduled Hours	Capacity	Total Entries	Average Minutes Per Entry	Average Contents	Maximum Contents	Current Contents	% Util
Ms Forging	154	1	55000	0.09	0.58	1	0	58.23
Ms Blank1	154	1	33000	0.06	0.22	1	0	22.32
Ms Pie25 1	154	2	33090	0.26	0.93	2	0	46.62
Ms Hyd	154	2	15066	1.22	2	2	2	100.00
Ms Pie63 1	154	2	14297	1.29	2	2	2	100.00
Ms Cut90 1	154	1	14400	0.31	0.48	1	0	48.91
Ms Blank2	154	1	48080	0.12	0.66	1	1	66.11
Ms Pie25 2	154	2	41200	0.24	1.07	2	0	53.64
Ms Pie25 3	154	2	40900	0.22	1.01	2	0	50.65
Ms Bend35	154	2	7500	0.53	0.43	2	0	21.64
Ms Bend35 2	154	2	22047	0.83	2	2	2	100.00
Ms Bend100	154	1	22140	0.32	0.76	1	0	76.81
Ms Pie63 3	154	2	15677	1.17	2	2	2	100.00
Ms Cut100	154	1	15750	0.22	0.38	1	0	38.28
Ms Pie63 2	154	2	7229	1.92	1.50	2	2	75.28
Ms Cut90 2	154	1	7290	0.29	0.22	1	0	22.98
Assy1 XC.1	154	1	5007	1.83	0.99	1	0	99.46
Assy1 XC.2	154	1	4998	1.83	0.99	1	0	99.44
Assy1 XC.3	154	1	4995	1.83	0.99	1	0	99.46
Assy1 XC	462	3	15000	1.83	0.99	45003	0	99.45
Assy1 H10.1	154	1	5460	1.69	0.99	1	1	100.00
Assy1 H10.2	154	1	5453	1.69	0.99	1	1	100.00
Assy1 H10.3	154	1	5456	1.69	0.99	1	1	100.00
Assy1 H10	462	3	16369	1.69	0.99	49110	3	100.00
Assy1 H00.1	154	1	2616	1.81	0.51	1	1	51.31
Assy1 H00.2	154	1	2615	1.81	0.51	1	1	51.26
Assy1 H00.3	154	1	2621	1.81	0.51	1	1	51.36

Assy1 H00	462	3	7852	1.81	0.51	23559	3	51.31
Assy2 XC	154	1	14966	0.61	0.99	1	1	99.87
Assy2 H10	154	1	16338	0.53	0.95	1	1	95.22
Assy2 H00	154	1	7814	0.60	0.51	1	1	51.03
Ms Expand	154	1	39401	0.20	0.85	1	1	85.31
Receiving Area	154	999999	210500	0.00	0	50	0	0.00
WIP	154	999999	266293	0.00	0	50	0	0.00
in forging	154	999999	1100	124.68	14.84	50	0	0.00
in blank1	154	999999	660	48.34	3.45	30	0	0.00
in blank2	154	999999	1210	180.29	23.60	180	32	0.00
in pie25 1	154	999999	750	49.78	4.04	88	0	0.00
in pie25 2	154	999999	1118	42.57	5.15	298	0	0.00
in pie25 3	154	999999	1210	60.35	7.90	398	0	0.00
in Hyd	154	999999	1100	2680.94	319.16	619	598	0.03
in bend35	154	999999	1350	1715.29	250.61	442	366	0.03
in bend100	154	999999	854	68.88	6.36	119	0	0.00
in cut100	154	999999	612	58.08	3.84	89	0	0.00
in cut90 1	154	999999	596	10.41	0.67	119	0	0.00
in cut90 2	154	999999	330	102.24	3.65	89	0	0.00
in pie63 1	154	999999	652	262.20	18.50	148	31	0.00
in pie63 2	154	999999	372	206.26	8.30	118	16	0.00
in pie63 3	154	999999	828	991.91	88.88	219	219	0.01
in Arm XC	154	999999	500	275.19	14.89	30	0	0.00
in Rod XC	154	999999	671	2734.23	198.55	379	371	0.02
in Boss XC	154	999999	1166	2781.82	351.03	688	666	0.04
in Shoe XC	154	999999	410	1279.04	56.75	115	110	0.01
in Arm H10	154	999999	547	43.73	2.58	22	2	0.00
in Rod H10	154	999999	677	2608.91	191.15	358	350	0.02
in Boss H10	154	999999	1208	2676.01	349.85	688	663	0.03
in Shoe H10	154	999999	435	1194.23	56.22	115	108	0.01
in Arm H00	154	999999	263	39.41	1.12	20	2	0.00
in Rod H00	154	999999	169	491.46	8.98	31	12	0.00
in Boss H00	154	999999	926	3553.32	356.10	688	665	0.04
in Shoe H00	154	999999	265	1984.67	56.91	114	108	0.01
in switch XC	154	999999	660	2744.23	196.01	375	361	0.02
in spring XC	154	999999	660	2744.23	196.01	375	361	0.02
in Pedal XC	154	999999	500	42.73	2.31	4	2	0.00
in switch H10	154	999999	660	2553.55	182.39	349	334	0.02
in spring H10	154	999999	660	2553.55	182.39	349	334	0.02
in Pedal H10	154	999999	545	15.60	0.92	1	1	0.00
in switch H00	154	999999	170	841.71	15.48	50	14	0.00
in spring H00	154	999999	170	841.70	15.48	50	14	0.00
in Pedal H00	154	999999	261	18.03	0.50	2	1	0.00
in expand	154	999999	1692	24.67	4.51	389	2	0.00
out forging	154	999999	55000	2.39	14.26	50	0	0.00
out blank1	154	999999	33000	1.53	5.46	50	0	0.00
out blank2	154	999999	48079	2.85	14.86	77	19	0.00
out pie25 1	154	999999	33090	9.15	32.77	50	40	0.00
out pie25 2	154	999999	41200	2.95	13.17	52	0	0.00

out pie25 3	154	999999	40900	2.80	12.42	51	0	0.00
out Hyd	154	999999	15064	8.64	14.09	30	4	0.00
out bend35	154	999999	29545	5.28	16.89	59	25	0.00
out bend100	154	999999	22140	4.48	10.75	30	0	0.00
out cut100	154	999999	15750	2.88	4.92	30	0	0.00
out pie63 1	154	999999	14295	9.43	14.59	30	15	0.00
out pie63 2	154	999999	7227	27.35	21.39	30	27	0.00
out pie63 3	154	999999	15675	8.26	14.02	30	15	0.00
out cut90 1	154	999999	14400	4.65	7.26	30	0	0.00
out cut90 2	154	999999	7290	3.46	2.73	30	0	0.00
out assy1 XC	154	999999	15000	5.69	9.23	30	0	0.00
out assy1 H10	154	999999	16366	8.18	14.50	30	16	0.00
out assy1 H00	154	999999	7849	8.72	7.41	30	19	0.00
out assy2 XC	154	999999	14965	8.93	14.47	30	25	0.00
out assy2 H10	154	999999	16337	7.80	13.80	30	17	0.00
out assy2 H00	154	999999	7813	8.73	7.38	30	13	0.00
out expand	154	999999	39400	2.89	12.36	30	10	0.00
Shipping XC	154	999999	503	10.32	0.56	23	0	0.00
Shipping H10	154	999999	547	10.22	0.60	24	0	0.00
Shipping H00	154	999999	263	2958.09	84.19	137	131	0.01
Shipping	154	1	22	0.00	0	1	0	0.00

LOCATION STATES BY PERCENTAGE (Multiple Capacity)

Location Name	Scheduled Hours	% Empty	% Partially Occupied	% Full	% Down
Ms Pie25 1	154	53.36	0.04	46.60	0.00
Ms Hyd	154	0.00	0.00	100.00	0.00
Ms Pie63 1	154	0.00	0.00	100.00	0.00
Ms Pie25 2	154	46.35	0.02	53.63	0.00
Ms Pie25 3	154	49.34	0.03	50.63	0.00
Ms Bend35	154	78.00	0.71	21.29	0.00
Ms Bend35 2	154	0.00	0.00	100.00	0.00
Ms Pie63 3	154	0.00	0.00	100.00	0.00
Ms Pie63 2	154	0.00	49.44	50.56	0.00
Receiving Area	154	100.00	0.00	0.00	0.00
WIP	154	100.00	0.00	0.00	0.00
in forging	154	41.79	58.21	0.00	0.00
in blank1	154	77.69	22.31	0.00	0.00
in blank2	154	33.91	66.09	0.00	0.00
in pie25 1	154	53.43	46.57	0.00	0.00
in pie25 2	154	46.41	53.59	0.00	0.00
in pie25 3	154	49.39	50.61	0.00	0.00
in Hyd	154	0.00	100.00	0.00	0.00
in bend35	154	0.00	100.00	0.00	0.00
in bend100	154	25.22	74.78	0.00	0.00

in cut100	154	62.86	37.14	0.00	0.00
in cut90 1	154	52.57	47.43	0.00	0.00
in cut90 2	154	77.64	22.36	0.00	0.00
in pie63 1	154	0.00	100.00	0.00	0.00
in pie63 2	154	49.47	50.53	0.00	0.00
in pie63 3	154	0.00	100.00	0.00	0.00
in Arm XC	154	0.68	99.32	0.00	0.00
in Rod XC	154	0.00	100.00	0.00	0.00
in Boss XC	154	0.00	100.00	0.00	0.00
in Shoe XC	154	0.00	100.00	0.00	0.00
in Arm H10	154	0.00	100.00	0.00	0.00
in Rod H10	154	0.00	100.00	0.00	0.00
in Boss H10	154	0.00	100.00	0.00	0.00
in Shoe H10	154	0.00	100.00	0.00	0.00
in Arm H00	154	49.09	50.91	0.00	0.00
in Rod H00	154	0.00	100.00	0.00	0.00
in Boss H00	154	0.00	100.00	0.00	0.00
in Shoe H00	154	0.00	100.00	0.00	0.00
in switch XC	154	0.00	100.00	0.00	0.00
in spring XC	154	0.00	100.00	0.00	0.00
in Pedal XC	154	0.13	99.87	0.00	0.00
in switch H10	154	0.00	100.00	0.00	0.00
in spring H10	154	0.00	100.00	0.00	0.00
in Pedal H10	154	7.96	92.04	0.00	0.00
in switch H00	154	0.00	100.00	0.00	0.00
in spring H00	154	0.00	100.00	0.00	0.00
in Pedal H00	154	49.81	50.19	0.00	0.00
in expand	154	15.40	84.60	0.00	0.00
out forging	154	42.94	57.06	0.00	0.00
out blank1	154	78.13	21.87	0.00	0.00
out blank2	154	36.55	63.45	0.00	0.00
out pie25 1	154	0.90	99.10	0.00	0.00
out pie25 2	154	47.43	52.57	0.00	0.00
out pie25 3	154	50.35	49.65	0.00	0.00
out Hyd	154	2.99	97.01	0.00	0.00
out bend35	154	6.66	93.34	0.00	0.00
out bend100	154	26.86	73.14	0.00	0.00
out cut100	154	67.17	32.83	0.00	0.00
out pie63 1	154	2.98	97.02	0.00	0.00
out pie63 2	154	4.90	95.10	0.00	0.00
out pie63 3	154	6.60	93.40	0.00	0.00
out cut90 1	154	52.59	47.41	0.00	0.00
out cut90 2	154	81.78	18.22	0.00	0.00
out assy1 XC	154	34.72	65.28	0.00	0.00
out assy1 H10	154	3.49	96.51	0.00	0.00
out assy1 H00	154	50.68	49.32	0.00	0.00
out assy2 XC	154	3.46	96.54	0.00	0.00
out assy2 H10	154	7.98	92.02	0.00	0.00
out assy2 H00	154	50.67	49.33	0.00	0.00

out expand	154	17.55	82.45	0.00	0.00
Shipping XC	154	95.52	4.48	0.00	0.00
Shipping H10	154	94.21	5.79	0.00	0.00
Shipping H00	154	0.65	99.35	0.00	0.00

LOCATION STATES BY PERCENTAGE (Single Capacity/Tanks)

Location Name	Scheduled Hours	% Operation	% Setup	% Idle	% Waiting	% Blocked	% Down
Ms Forging	154	58.23	0.00	41.77	0.00	0.00	0.00
Ms Blank1	154	22.32	0.00	77.68	0.00	0.00	0.00
Ms Cut90 1	154	31.77	0.00	51.09	17.14	0.00	0.00
Ms Blank2	154	57.64	0.00	33.89	8.47	0.00	0.00
Ms Bend100	154	50.44	0.00	23.19	26.37	0.00	0.00
Ms Cut100	154	33.95	0.00	61.72	4.33	0.00	0.00
Ms Cut90 2	154	18.84	0.00	77.02	4.14	0.00	0.00
Assy1 XC.1	154	63.81	0.00	0.54	35.65	0.00	0.00
Assy1 XC.2	154	63.82	0.00	0.56	35.62	0.00	0.00
Assy1 XC.3	154	63.82	0.00	0.54	35.64	0.00	0.00
Assy1 XC	462	63.82	0.00	0.55	35.63	0.00	0.00
Assy1 H10.1	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10.2	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10.3	154	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H10	462	100.00	0.00	0.00	0.00	0.00	0.00
Assy1 H00.1	154	51.30	0.00	48.69	0.01	0.00	0.00
Assy1 H00.2	154	51.26	0.00	48.74	0.00	0.00	0.00
Assy1 H00.3	154	51.36	0.00	48.64	0.00	0.00	0.00
Assy1 H00	462	51.31	0.00	48.69	0.00	0.00	0.00
Assy2 XC	154	99.87	0.00	0.13	0.00	0.00	0.00
Assy2 H10	154	95.22	0.00	4.78	0.00	0.00	0.00
Assy2 H00	154	51.03	0.00	48.97	0.00	0.00	0.00
Ms Expand	154	85.31	0.00	14.69	0.00	0.00	0.00
Shipping	154	0.00	0.00	100.00	0.00	0.00	0.00

FAILED ARRIVALS

Entity Name	Location Name	Total Failed
Boss	WIP	0
Brake shoe	Receiving Area	0
Brake shoe	WIP	0
Arm XC	Receiving Area	0
Arm XC	WIP	0
Arm XC	in cut90 1	0
Arm XC	in pie63 1	0

Rod XC	Receiving Area	0
Rod XC	WIP	0
Rod XC	in pie25 1	0
Switch XC	WIP	0
Spring XC	WIP	0
Pedal XC	in expand	0
Arm H10	Receiving Area	0
Arm H10	WIP	0
Arm H10	in bend100	0
Arm H10	in cut100	0
Arm H10	in pie63 3	0
Rod H10	Receiving Area	0
Rod H10	WIP	0
Rod H10	in pie25 2	0
Rod H10	in pie25 3	0
Switch H10	WIP	0
Spring H10	WIP	0
Pedal H10	in expand	0
Arm H00	Receiving Area	0
Arm H00	WIP	0
Arm H00	in blank2	0
Arm H00	in cut90 2	0
Arm H00	in pie63 2	0
Rod H00	Receiving Area	0
Rod H00	WIP	0
Rod H00	in pie25 2	0
Rod H00	in pie25 3	0
Switch H00	WIP	0
Spring H00	WIP	0
Pedal H00	in expand	0
pengiriman	Shipping	0

ENTITY ACTIVITY

Entity Name	Total Exits	Current Quantity In System	Average Minutes In System	Average Minutes In Move Logic	Average Minutes Wait For Res, etc.	Average Minutes In Operation	Average Minutes Blocked
Boss	39221	64279	2797.05	0.17	0.00	0.00	2796.88
Brake shoe	39221	18779	1463.65	0.47	2.36	0.09	1460.70
Arm XC	0	20370	-	-	-	-	-
Rod XC	15000	20090	2854.18	0.49	9.93	0.31	2843.45
Switch XC	14966	19534	2740.73	0.28	0.00	0.00	2740.44
Spring XC	14966	19534	2740.73	0.28	0.00	0.00	2740.44
Pedal XC	15090	60	2965.45	0.60	38.66	2.92	2923.26
Box Arm XC	2578	50	0.10	0.10	0.00	0.00	0.00
Box Rod XC	1991	30	0.16	0.16	0.00	0.00	0.00

Box Switch XC	660	30	0.28	0.28	0.00	0.00	0.00
Box Spring XC	660	30	0.28	0.28	0.00	0.00	0.00
Box Boss	3300	150	0.17	0.17	0.00	0.00	0.00
Box Shoe	2210	50	0.24	0.24	0.00	0.00	0.00
Box Arm H10	3641	50	0.33	0.33	0.00	0.00	0.00
Box Rod H10	2691	0	0.10	0.10	0.00	0.00	0.00
Box Switch H10	660	30	0.24	0.24	0.00	0.00	0.00
Box Spring H10	660	30	0.24	0.24	0.00	0.00	0.00
Box Arm H00	1255	0	0.11	0.11	0.00	0.00	0.00
Box Rod H00	623	0	0.08	0.08	0.00	0.00	0.00
Box Switch H00	170	0	0.20	0.20	0.00	0.00	0.00
Box Spring H00	170	0	0.20	0.20	0.00	0.00	0.00
Arm H10	0	19094	-	-	-	-	-
Rod H10	16369	18981	2754.61	0.40	7.51	0.53	2746.16
Switch H10	16338	18162	2549.57	0.24	0.00	0.00	2549.32
Spring H10	16338	18162	2549.57	0.24	0.00	0.00	2549.32
Pedal H10	16410	76	2807.09	1.97	39.52	3.47	2762.11
Arm H00	0	581	-	-	-	-	-
Rod H00	7852	598	753.96	0.31	7.32	0.51	745.80
Switch H00	7814	686	827.26	0.20	0.00	0.00	827.06
Spring H00	7814	686	827.26	0.20	0.00	0.00	827.06
Pedal H00	3960	4009	4081.53	0.83	45.60	3.50	4031.58
Box Pedal XC	998	0	0.08	0.08	0.00	0.00	0.00
Box Pedal H10	1089	0	0.12	0.12	0.00	0.00	0.00
Box Pedal H00	521	0	0.12	0.12	0.00	0.00	0.00
Brake pedal XC	503	0	10.32	0.00	0.00	0.00	10.32
Brake pedal H10	547	0	10.35	0.12	0.00	0.00	10.22
Brake pedal H00	132	131	3299.11	0.12	0.00	0.00	3298.98
pengiriman	22	0	0.00	0.00	0.00	0.00	0.00

ENTITY STATES BY PERCENTAGE

Entity Name	% In Move Logic	% Wait For Res, etc.	% In Operation	% Blocked
Boss	0.01	0.00	0.00	99.99
Brake shoe	0.03	0.16	0.01	99.80
Arm XC	-	-	-	-
Rod XC	0.02	0.35	0.01	99.62
Switch XC	0.01	0.00	0.00	99.99
Spring XC	0.01	0.00	0.00	99.99
Pedal XC	0.02	1.30	0.10	98.58
Box Arm XC	100.00	0.00	0.00	0.00
Box Rod XC	100.00	0.00	0.00	0.00
Box Switch XC	100.00	0.00	0.00	0.00
Box Spring XC	100.00	0.00	0.00	0.00
Box Boss	100.00	0.00	0.00	0.00

Box Shoe	100.00	0.00	0.00	0.00
Box Arm H10	100.00	0.00	0.00	0.00
Box Rod H10	100.00	0.00	0.00	0.00
Box Switch H10	100.00	0.00	0.00	0.00
Box Spring H10	100.00	0.00	0.00	0.00
Box Arm H00	100.00	0.00	0.00	0.00
Box Rod H00	100.00	0.00	0.00	0.00
Box Switch H00	100.00	0.00	0.00	0.00
Box Spring H00	100.00	0.00	0.00	0.00
Arm H10	-	-	-	-
Rod H10	0.01	0.27	0.02	99.69
Switch H10	0.01	0.00	0.00	99.99
Spring H10	0.01	0.00	0.00	99.99
Pedal H10	0.07	1.41	0.12	98.40
Arm H00	-	-	-	-
Rod H00	0.04	0.97	0.07	98.92
Switch H00	0.02	0.00	0.00	99.98
Spring H00	0.02	0.00	0.00	99.98
Pedal H00	0.02	1.12	0.09	98.78
Box Pedal XC	100.00	0.00	0.00	0.00
Box Pedal H10	100.00	0.00	0.00	0.00
Box Pedal H00	100.00	0.00	0.00	0.00
Brake pedal XC	0.00	0.00	0.00	100.00
Brake pedal H10	1.20	0.00	0.00	98.80
Brake pedal H00	0.00	0.00	0.00	100.00
pengiriman	-	-	-	-

VARIABLES

Variable Name	Total Changes	Average Minutes Per Change	Minimum Value	Maximum Value	Current Value	Average Value
kekurangan XC	22	420.00	0	12	11	10.63
kekurangan H10	18	513.33	0	2	2	1.40
kekurangan H00	0	0.00	0	0	0	0
jml XC	547	16.89	-12	25	0	11.35
jml H10	587	15.74	-2	28	0	12.47
jml H00	285	32.42	0	137	131	84.19
status XC	0	0.00	0	0	0	0
ruleroute XC	1250	7.35	0	1	1	0.00
henti XC	756	12.16	0	1	1	0.37
status H10	0	0.00	0	0	0	0
ruleroute H10	1224	7.52	0	1	0	0.00
henti H10	1080	8.53	0	1	1	0.32
status H00	0	0.00	0	0	0	0
ruleroute H00	823	11.14	0	1	0	0.00
henti H00	763	12.05	0	1	0	0.16

jml pedal XC	29966	0.30	0	101	34	54.89
jml arm H10	32779	0.28	0	657	41	63.16
jml arm H00	15742	0.58	0	597	38	26.24
jml arm XC	30000	0.30	0	885	0	436.44
total kurang XC	22	420.00	0	245	245	115.81
total kurang H10	18	513.33	0	25	25	11.31
total kurang H00	0	0.00	0	0	0	0
hyd	48066	0.19	0	18567	17934	9560.79
in 63 1	29507	0.31	0	917	913	533.45
in 90 1	28800	0.31	0	120	0	8.26
in 35	70047	0.13	0	13252	10953	7501.6
in bend 100	44280	0.20	0	505	0	43.41
in 63 3	37907	0.24	0	6554	6553	2544.92
in cut 100	31500	0.29	0	89	0	8.56
in blank 2	15200	0.60	0	1500	40	321.38
in 63 2	14909	0.61	0	468	451	95.25
in 90 2	14580	0.63	0	89	0	6.30
in ex	78851	0.11	0	389	49	75.99
in pedalH10	32688	0.28	0	30	12	13.81
in pedalH00	15644	0.59	0	36	16	7.89

KOMENTAR DOSEN PENGUJI

Nama Mahasiswa : Limia Verlina
NRP : 0423072
Judul Tugas Akhir : Analisis Penerapan *Theory Of Constraint* Dalam Meminimasi Inventory Melalui Studi Simulasi (Studi Kasus di PT. Sinar Terang Logamjaya (STALLION))

Komentar-Komentar Dosen Penguji :

1. Konsep berfikir anda bagus
2. Kembangkan terus kemampuan anda
3. Tingkatan kemampuan berbahasa inggris
4. GBU
5. Rumus kenapa ada yang tidak ada di bab 2?
6. Skenario 5 buat apa? Seharusnya 4 skenario saja, kemudian usulin salah satu (yang terbaik)
7. Penjelasan penentuan constraint (untuk yang jumlah mesin bukan 1) → belum ada
8. Hal 5-24 → kenapa bukan skenario 2 yang terpilih? Kalau skenario 2 & 5 sama, kenapa throughput, output dan total kurangnya beda?
9. Alasan perusahaan menyimpan ± 600 unit? Karena usulan jauh banget. Apa perusahaan meu terima usulan? Jangan-jangan mereka punya alasan sendiri.
10. Tahap penentuan metode pemecahan masalah belum ada
11. Perumusan masalah no 1 tidak perlu karena sudah diketahui pada identifikasi masalah.
12. Informasi total kurang pada tabel 5.16 → bisa untuk usulan peningkatan kapasitas (penelitian lebih lanjut)

DATA PENULIS

Nama	:	Limia Verlina
Alamat	:	Jalan Sindang Sari Barat 55, Cimahi
No. Telp	:	022-6042932
No. Handphone	:	022-91503077
Alamat email	:	ai_fei31@yahoo.co.id
Pendidikan	:	TKK BPK Penabur Bandung SDK 6 BPK Penabur Bandung SLTPK 5 BPK Penabur Bandung SMUK 3 BPK Penabur Bandung Jurusan Teknik Industri, Universitas Kristen Maranatha Bandung
Nilai Tugas Akhir	:	A
Tanggal USTA	:	13 Juni 2008