

BAB VI

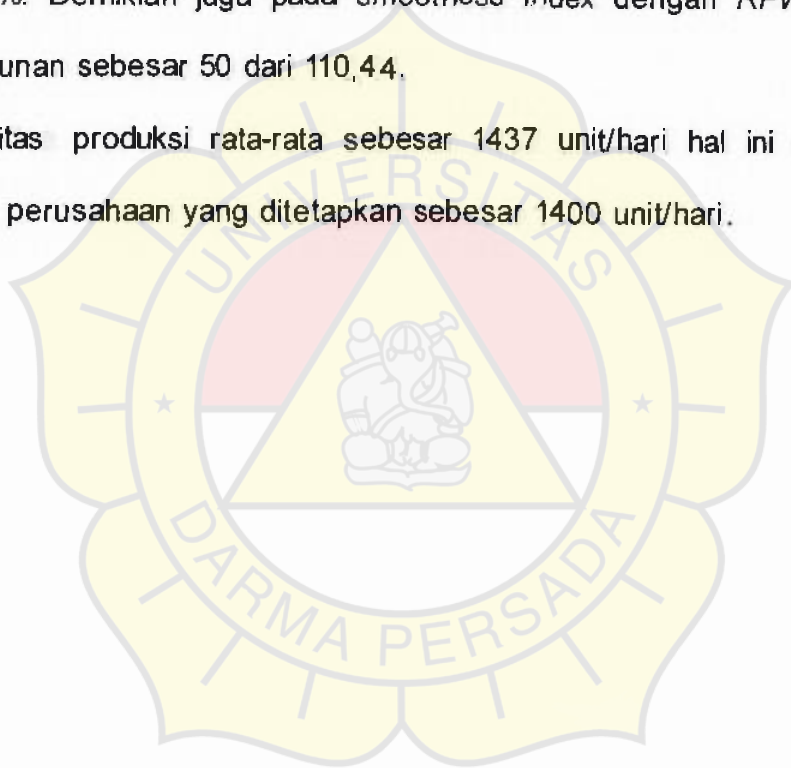
KESIMPULAN DAN SARAN

6.1 KESIMPULAN

Berdasarkan hasil analisa dan pembahasan yang telah dilakukan maka dapat disimpulkan bahwa:

1. Pelaksanaan *Lean manufacturing* pada PT. Yamaha Indonesia Motor Mfg masih harus diperbaiki dilihat dari jumlah tenaga kerja yang masih tinggi yaitu 231 tenaga kerja langsung padahal jumlah ini masih bisa dikurangi sebanyak 50 tenaga kerja langsung, sistem pengendalian visual dengan penambahan prosedural audit produk serta *respect of humanity* yang dapat ditingkatkan dari adanya efisiensi tenaga kerja.
2. Tenaga kerja yang aktual untuk tipe motor yamaha Jupiter Z, Jupiter MX, dan Scorpion dalam proses pembuatan *part crank* di *line machining* di operasikan 4 orang tenaga kerja langsung yaitu *line* 3,4, 6, 8, 10, dan 12 dan untuk tipe-tipe motor yamaha yang lain dioperasikan 3 orang tenaga kerja langsung yaitu *line* 1, 2, 5, 7, 9, 11, 13, 14, 15, 16, 17, dan 18 selama tidak terjadi perubahan laju produksi.

3. Keseimbangan lintasan untuk produk *part crank* sudah seimbang dengan efisiensi keseimbangan meningkat 10% dari 65,6%. *Idle time* pada keseimbangan lini cukup rendah 161 detik dari 278 detik. Nilai *balance delay* terjadi penurunan yang pada awalnya 30,68% menjadi 18,9 %. Demikian juga pada *smoothness index* dengan *RPW* terjadi penurunan sebesar 50 dari 110,44.
4. Kapasitas produksi rata-rata sebesar 1437 unit/hari hal ini melebihi target perusahaan yang ditetapkan sebesar 1400 unit/hari.



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LAMPIRAN I

WAKTU SIKLUS LINE 1,2,13,15,17

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|------------------|-----|-----|-----|---|---|------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : CENTERING | | | | | | |
| Proses | : AMBIL MATERIAL | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 2 | 2 | 1.5 | 2 | 2 | 2 | 1.92 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 1.5 | 1.5 | 1.5 | 1.5 | 2 | 2 | 1.67 |
| 4 | 2 | 1.5 | 1.5 | 1.5 | 2 | 2 | 1.75 |
| 5 | 2 | 2 | 1.5 | 2 | 2 | 2 | 1.92 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|--------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : CENTERING | | | | | | |
| Proses | : CENTERING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 43 | 40 | 43 | 43 | 42 | 41 | 42 |
| 2 | 41 | 42 | 42 | 42 | 42 | 42 | 41.833 |
| 3 | 43 | 44 | 44 | 45 | 45 | 43 | 44 |
| 4 | 45 | 40 | 40 | 45 | 45 | 43 | 43 |
| 5 | 40 | 44 | 44 | 47 | 47 | 39 | 43,5 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : TURNING 1 | | | | | | |
| Proses | : TURNING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 43 | 40 | 43 | 43 | 42 | 41 | 42 |
| 2 | 42 | 42 | 43 | 43 | 43 | 42 | 42.5 |
| 3 | 43 | 44 | 44 | 45 | 45 | 43 | 44 |
| 4 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| 5 | 40 | 42 | 42 | 43 | 44 | 44 | 42.5 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : TURNING 2 | | | | | | |
| Proses | : TURNING 2 | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 36 | 35 | 35 | 36 | 36 | 36 | 35.67 |
| 2 | 36 | 36 | 36 | 35 | 36 | 36 | 35.83 |
| 3 | 35 | 34 | 34 | 35 | 35 | 35 | 34.67 |
| 4 | 36 | 35 | 35 | 35 | 36 | 35 | 35.33 |
| 5 | 34 | 34 | 36 | 37 | 37 | 37 | 35.83 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|------|------|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : BORING | | | | | | |
| Proses | : BORING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 37 | 38 | 37.5 | 37 | 38 | 37 | 37.41 |
| 2 | 37.5 | 36 | 36 | 36 | 38 | 37 | 36.75 |
| 3 | 37 | 38 | 37 | 36 | 38 | 37 | 31.17 |
| 4 | 36 | 37 | 36 | 36 | 37 | 36 | 36.33 |
| 5 | 36 | 37.5 | 37 | 36 | 36 | 38 | 36.75 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : HOBGING | | | | | | |
| Proses | : HOBGING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 51 | 53 | 53 | 52 | 51 | 51 | 51.8 |
| 2 | 52 | 52 | 51 | 51 | 51 | 53 | 51.67 |
| 3 | 53 | 53 | 51 | 51 | 51 | 51 | 51.67 |
| 4 | 52 | 52 | 52 | 52 | 53 | 53 | 52.33 |
| 5 | 51 | 51 | 51 | 51 | 51 | 54 | 51.5 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : CLEANING | | | | | | |
| Proses | : CLEANING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 42 | 42 | 43 | 43 | 43 | 43 | 42.67 |
| 2 | 43 | 44 | 43 | 43 | 44 | 42 | 43.16 |
| 3 | 42 | 42 | 42 | 42 | 42 | 43 | 42.16 |
| 4 | 42 | 42 | 42 | 44 | 44 | 43 | 42.83 |
| 5 | 43 | 43 | 43 | 42 | 42 | 43 | 42.67 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : EXT GRINDING | | | | | | |
| Proses | : EXT GRINDING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 38 | 41 | 41 | 42 | 41 | 41 | 40.67 |
| 2 | 39 | 39 | 40 | 38 | 44 | 41 | 40.16 |
| 3 | 40 | 41 | 41 | 41 | 41 | 41 | 40.83 |
| 4 | 39 | 42 | 42 | 42 | 41 | 41 | 41.16 |
| 5 | 41 | 41 | 41 | 42 | 44 | 40 | 41.5 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : FACING | | | | | | |
| Proses | : FACING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 48 | 45 | 48 | 45 | 45 | 45 | 46 |
| 2 | 43 | 46 | 46 | 45 | 45 | 45 | 45 |
| 3 | 47 | 46 | 45 | 45 | 45 | 46 | 45.67 |
| 4 | 47 | 45 | 45 | 45 | 48 | 44 | 45.67 |
| 5 | 45 | 45 | 45 | 45 | 45 | 46 | 45.16 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : INT GRINDING | | | | | | |
| Proses | : INT GRINDING | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 47 | 45 | 47 | 45 | 45 | 44 | 45.5 |
| 2 | 45 | 45 | 46 | 44 | 45 | 45 | 45 |
| 3 | 46 | 44 | 45 | 45 | 45 | 45 | 45 |
| 4 | 43 | 45 | 45 | 47 | 48 | 44 | 45.33 |
| 5 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|-----------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : CLEANING 2 | | | | | | |
| Proses | : CLEANING 2 | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 40 | 42 | 43 | 42 | 42 | 42 | 41.83 |
| 2 | 42 | 39 | 45 | 42 | 42 | 42 | 42 |
| 3 | 41 | 44 | 45 | 42 | 41 | 41 | 42.33 |
| 4 | 42 | 42 | 43 | 41 | 42 | 42 | 42 |
| 5 | 44 | 41 | 42 | 43 | 41 | 42 | 42.16 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|------------------|----|----|----|----|----|-------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : OIL HOLE CHECK | | | | | | |
| Proses | : OIL HOLE CHECK | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 35 | 35 | 31 | 32 | 30 | 33 | 32.67 |
| 2 | 33 | 36 | 31 | 33 | 31 | 31 | 32.5 |
| 3 | 33 | 33 | 34 | 32 | 34 | 32 | 33 |
| 4 | 35 | 31 | 32 | 33 | 33 | 33 | 32.83 |
| 5 | 33 | 33 | 33 | 34 | 32 | 33 | 33 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|--------------------|---|---|---|---|---|------|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : PITCH INSPECTION | | | | | | |
| Proses | : PITCH INSPECTION | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 5 | 5 | 6 | 5 | 8 | 4 | 5.5 |
| 2 | 5 | 6 | 5 | 5 | 7 | 5 | 5.5 |
| 3 | 6 | 4 | 4 | 6 | 6 | 5 | 5.16 |
| 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 5 | 6 | 6 | 5 | 5 | 5 | 5 | 5.3 |

| JALUR MACHINING 1,2,13,15,17 | | | | | | | |
|------------------------------|------------------|---|---|---|---|---|-----|
| Model | : 2D5 | | | | | | |
| Produksi | : Part Crank 2 | | | | | | |
| Tipe Motor | : Mio atau Soul | | | | | | |
| Machine Name | : STOCK MATERIAL | | | | | | |
| Proses | : STOCK MATERIAL | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | SG |
| 1 | 3 | 3 | 4 | 3 | 2 | 4 | 3.2 |
| 2 | 3 | 3 | 4 | 4 | 3 | 3 | 3.3 |
| 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2.8 |
| 4 | 3 | 4 | 2 | 2 | 3 | 3 | 2.8 |
| 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |