RELAYOUT LINE CAGE, TANDEM DIFF DRIVE PINION TAPER BEARING BERBASIS *LEAN OPERATION* DENGAN MENGGUNAKAN METODE *SYSTEMATIC LAYOUT PLANNING* DAN *LINE BALANCING* PADA PT BAKRIE AUTOPARTS

Putri Lestari

ABSTRAK

Kemampuan perusahaan dalam memenuhi kebutuhan pelanggan, apapun, dimanapun dan kapanpun sangatlah dituntut dalam perkembangan bisnis saat ini. Oleh karena itu perusahaan harus mempu mendesain proses produksi yang optimal dengan mendesain tata letak lantai produksi yang nyaman dan efisien dengan basis lean operation. Keseluruhan aktifitas proses produksi dapat diidentifikasi menggunakan salah satu alat lean manufacturing yaitu Value Steam Mapping dengan memetakan kegiatan add value dan non add value guna ditemukannya peluang untuk melakukan kegiatan improvement yaitu melakukan relayout. Perancangan tata letak pada *line* pinion dilakukan dengan menggunakan metode Systematic Layout Planning (Block diagramming dan ARD) dan Line Balancing yang menghasilkan 3 rekomendasi alternatif tata letak. Alternatif terpilih adalah alternatif kedua yang dianalisis dengan menggunakan metode line balancing. Alternatif ini mampu meningkatkan produktifitas produk BT 1803 dan BT 1813 sebesar 300% , BT 1799 sebesar 100%, utilisasi mesin operasi BT 1803 sebesar 72%, BT 1813 sebesar 91% dan BT 1977 sebesar 72%, saving area seluas 33m², dan mengoptimalkan jumlah operator dari 4 operator menjadi 2 operator.

Kata Kunci: Lean Manufacturing, Lean Opeation, Value Stream Mapping, Systemaic Layout Planning, Line Balancing.

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ABSTRACT

The ability of a company to meet customer's requirements in any circumstances is an obligation which been required in the era of business advancement presently. Therefore, a company should adequate in creating the optimal design of production process by adjusting the pleasant and efficient layout design of production floor based on lean operation. The aggregate process production activity could be identified by one of lean manufacturing tools which is Value Steam Mapping, this tools could be used to map the value-added and non-value added activity in order to discover the possibility of improvement process by perform the re-layout activity. The layout design in pinion line is performed by using Systematic Layout Planning (block diagramming and ARD) and Line Balancing which generate three kind alternative recommendations for layout design. Based on the study which is conducted by using Line Balancing method, Alternative 2 is the suitable layout design recommendation. Alternative 2 is the one which adequate to improve the productivity of each product variance BT 1803 and BT 1813 – 300%, BT 1799 – 100%; improve the machine utilization BT 1803 – 72%, BT 1813 – 91%, and BT 1799 – 72%; saving area for 33m^2; and optimize the number of man power from 4 to 2.

Key words: Lean Manufacturing, Lean Opeation, Value Stream Mapping, Systemaic Layout Planning, Line Balancing.