

## Produksi braket ortodontik dengan menggunakan proses investment casting = Production of orthodontic bracket by using investment casting process

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### Abstrak

[<b>ABSTRAK</b><br>

Saat ini, kebutuhan akan kesehatan gigi semakin meningkat khususnya pada bidang ortodontik. Tujuan utama dari perawatan ortodontik adalah memperbaiki kondisi maloklusi. Maloklusi menyebabkan masalah estetis pada wajah pasien serta menyebabkan kondisi tidak nyaman seperti pada saat bernapas, menelan bahkan berbicara. Jika tidak diperbaiki, maloklusi dapat menyebabkan kondisi yang lebih serius seperti resiko gigi berlubang lebih besar, gusi iritasi, pembusukan gigi, dan lain-lain. Kondisi maloklusi dapat diperbaiki dengan menggunakan perawatan braket ortodontik. Problematika yang terjadi saat ini adalah seluruh braket ortodontik yang ada di Indonesia merupakan produk impor, hal ini menyebabkan perkembangan keahlian seorang dokter gigi di Indonesia menjadi sangat tergantung dengan perkembangan desain yang terjadi di luar negeri, tanpa dapat berinovasi membuat suatu mekanisme teknik perawatan baru berdasarkan desain yang diteliti oleh dokter gigi itu sendiri. Tujuan dari penelitian ini adalah untuk memproduksi braket ortodontik serta sebagai sarana terhadap dokter gigi di Indonesia untuk dapat mengembangkan keahlian serta meneliti braket ortodontik sesuai dengan desain yang diinginkan. Produksi braket ortodontik dilakukan dengan menggunakan metode investment casting. Hasilnya menunjukkan bahwa braket ortodontik telah berhasil diproduksi dengan dimensi yang berada dalam toleransi serta kualitas kekasaran permukaan yang baik. Penelitian ini merupakan tahap awal dalam studi pengembangan produksi braket ortodontik dengan metode investment casting.

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<b>ABSTRACT</b><br>

Current, the need for dental health is increasing, especially in orthodontic field. The main purposes of orthodontic treatment is to improve the condition of malocclusion. Malocclusion causes aesthetic problems on the patient's face and causing uncomfortable conditions such as breathing, swallowing and even talking. If not corrected, malocclusion can lead to more serious conditions such as a greater risk of tooth decay, gum irritation, and others. Malocclusion can be corrected using orthodontic bracket treatment. The problems that occur nowadays is the entire orthodontic bracket in Indonesia are imported, this has led to the development of the expertise of a dentist in Indonesia to be very dependent on the development of the design which occurred abroad, without being able to create a new design examined by dentists themselves. The purpose of this research is to produce an orthodontic bracket as well as a means to dentists in Indonesia to be able to develop expertise and researching the orthodontic bracket in accordance with the desired design. Production orthodontic bracket is done by using the investment casting process. The result showed that the orthodontic bracket has successfully produced with dimensions that are within tolerance and good quality of surface roughness. This study is an early stage of the development production of orthodontic bracket by using investment casting process., Current, the need for dental health is increasing, especially in orthodontic field. The main purposes of orthodontic treatment is to improve the condition of malocclusion. Malocclusion

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