

## Accepted Manuscript

Title: Effects of kinematic parameters on electric discharge truing of small ball-end diamond wheels for small concave surfaces grinding

Authors: Tingzhang Wang, Jian Cheng, Henan Liu, Mingjun Chen, Zhen Fang, Bo Yu



PII: S0141-6359(17)30206-4  
DOI: <http://dx.doi.org/doi:10.1016/j.precisioneng.2017.07.018>  
Reference: PRE 6628

To appear in: *Precision Engineering*

Received date: 17-4-2017  
Revised date: 26-7-2017  
Accepted date: 31-7-2017

Please cite this article as: Wang Tingzhang, Cheng Jian, Liu Henan, Chen Mingjun, Fang Zhen, Yu Bo. Effects of kinematic parameters on electric discharge truing of small ball-end diamond wheels for small concave surfaces grinding. *Precision Engineering* <http://dx.doi.org/10.1016/j.precisioneng.2017.07.018>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Effects of kinematic parameters on electric discharge truing of small ball-end diamond wheels for small concave surfaces grinding

Tingzhang Wang<sup>1</sup>, Jian Cheng<sup>1</sup>, Henan Liu<sup>1</sup>, Mingjun Chen<sup>1\*</sup>, Zhen Fang<sup>2</sup>, Bo Yu<sup>2</sup>

<sup>1</sup>*Center for Precision Engineering, Harbin Institute of Technology, Harbin150001, China*

<sup>2</sup>*China Electronics Technology Group Corporation No.26 Research Institute, Chongqing400060, China*

**\*Corresponding author:**

P.O. Box 413, Harbin 150001, P.R. China

Tel.: +86(0)451-86403252

Fax: +86(0)451-86403252

**E-mail: chenmj@hit.edu.cn.**

## Highlights

- 1 The Effects of kinematic parameters on electric discharge truing of small ball-end diamond wheels were investigated.
- 2. Effects of kinematic errors, geometric errors of cathode and relative position errors on truing were analyzed by establishing mathematical model through screw theory.
- 3. The experiments were conducted to investigate the effects of spindle speeds of electrode and grinding wheel on truing.
- 4. PV error and surface roughness of Complex component with small concave surfaces ground by the optimally trued 1.9 mm-radius ball-end diamond wheel are 0.328 $\mu$ m and 50.2nm respectively.

**Abstract:** To meet the strict requirements for processing quality, the metal-bonded small ball-end diamond wheel (SBDW) has become a promising choice to process the hard and brittle materials with

Download English Version:

<https://daneshyari.com/en/article/7180522>

Download Persian Version:

<https://daneshyari.com/article/7180522>

[Daneshyari.com](https://daneshyari.com)