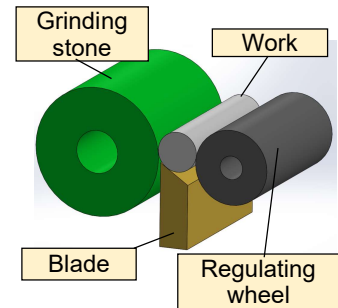


Centerless Grinding for Small Pipe and Thin Wire

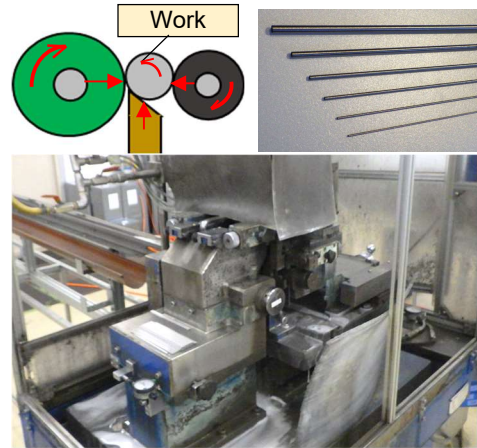
1. Principle of centerless grinding

Centerless grinding, in which a rod work is not necessary to be hold at its center, is a significant process for thin long products to be finished to an accurate diameter and stable surface roughness. As shown in the right figure, the work is supported by the regulating wheel to be ground with the grinding stone. This is suitable for grinding the outer diameter of a long and narrow cylindrical or columnar work in a uniform manner. Various kinds of materials including stainless steel, special metals, or ceramics can be processed by using a suitable grinding stone.



2. Centerless grinding for small pipes

The outer diameter of a small diameter pipe can be ground in high precision by adjusting the spindle axis of the grinding stone to be parallelly located with that of the regulating wheel. In the example on the right figure, the outer diameter of the work will be ground till the work butts against each surface of the grinding stone, the regulating wheel, and the blade, resulting in an accurate diameter and stable roughness of the work.



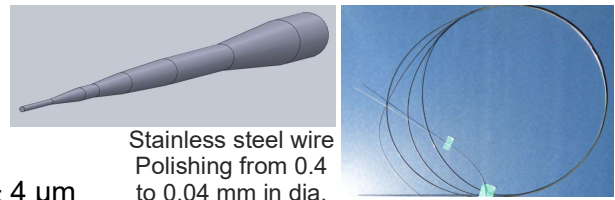
- The grinding machine specification
Maximum length of a work: 2 m
Finished diameter: 0.45 - 6 mm \pm 5 μ m

3. Centerless grinding for thin wires

In grinding of an ultra-fine wire, the wire can be ground into a tapered shape by controlling the gap between the grinding stone and the regulating wheel using the computer program. The figure below shows an example of the tapered wire with multi-diameters which gradually become narrow from 0.4 to 0.04 mm. The grinding machine on the right photo can process continuously up to 200 wires by loading and unloading them automatically.



- The grinding machine specification
Maximum length of a work: 3.3 m
Outer diameter of a work: 0.25 - 1 mm
Finished diameter:
0.04 mm to a material diameter \pm 4 μ m



Stainless steel wire
Polishing from 0.4
to 0.04 mm in dia.

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