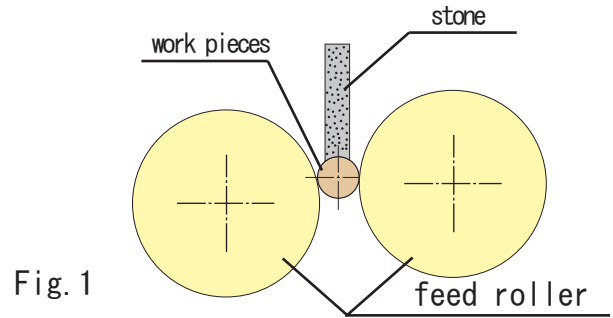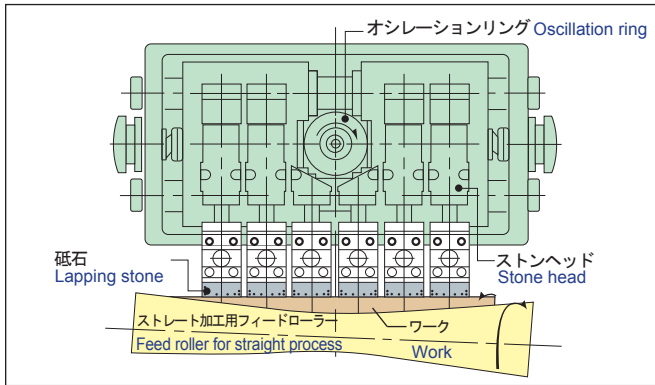# O.D. size variations of input parts for model ASM-500ZR

A perfect performance of through-feed stone lapping is obtained by a pair of theoretical hyperbolic feed rollers, equipped with this model, as shown in Fig. 1.

オシレーションリング Oscillation ring
砥石 Lapping stone
ストンヘッド Stone head
ストレート加工用フィードローラー Feed roller for straight process
ワーク Work

work pieces
stone
feed roller

Fig.1

Generally speaking, an amount of stock to be removed by through-feed stone lapping is very small, about 2 to 3 times more in diameter, compared with that of roughness（μmRz）. In case that O.D. of input work pieces have large size size variations, stock removal after stone lapping is not stable, which results in nonideal machining, as shown in Fig. 2.

stone oscillation
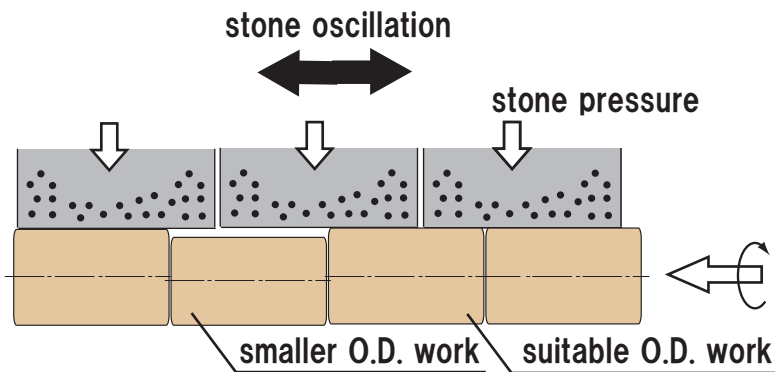
stone pressure

smaller O.D. work   suitable O.D. work

Fig.2

So, it is most suitable to connect direct with a centerless grinder to conduct time-series machining; big volume producers such as both bearing and, automobile manufacturers apply line production system using chutes or conveyors.
In this method, variation of O.D. sizes of contiguous work pieces can be considered as "zero", and disadvantages described above would not occur. In case that a manufacturing lot size is small, and a direct connected system is not applied, however, O.D. sizes should be controlled according to time-series machining.

If a work piece has a notch section, "bridge effect" is obtainable by providing stones with enough width and more sufficient length, as shown in Fig. 3, and thus bad effects rendered by a notch can be minimized as much as possible.
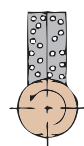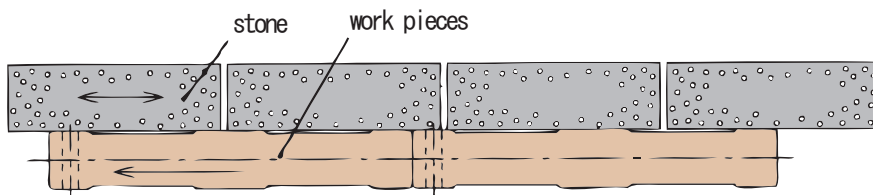

stone   work pieces

Fig.3