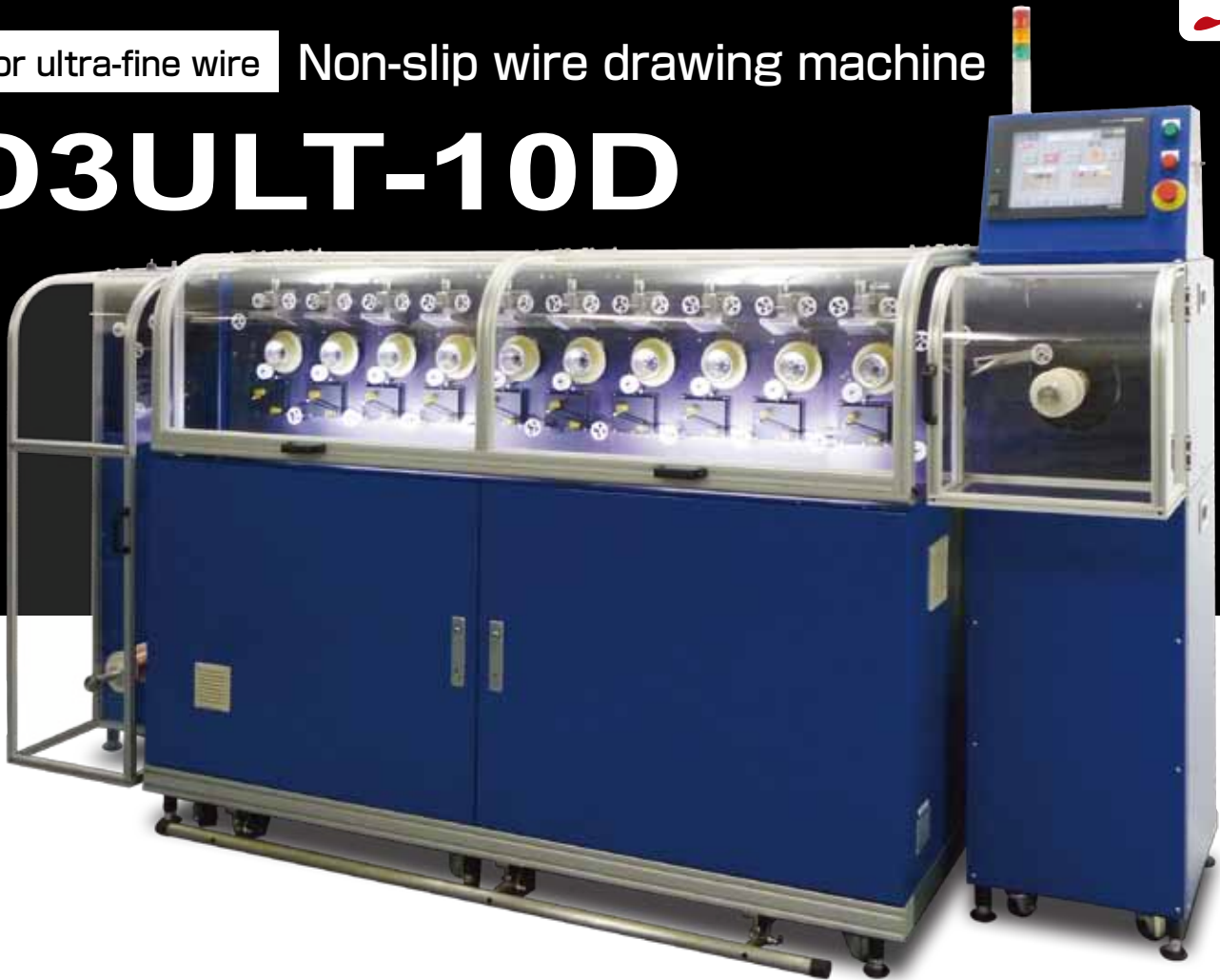


Make it into a non-slip with
high-precision control / new design of
the ultra-fine metal wire drawing machine.



For ultra-fine wire Non-slip wire drawing machine

D3ULT-10D



The development was aimed at the establishment of new wire drawing process in the range of ultra-fine wire (Below $30\mu\text{m}$). Multi designed by putting 1 dancer, 1 die and 1 capstan as one wire drawing unit. We succeeded in implementation of no slipping by making the capstan driving directly with our own system. It makes the production of the ultra-fine wire which is difficult with the existing technology (slip style) possible.

D3 series are the only next-generation wire drawing machine corresponds to ultra-fine wire drawing process.



●Control area actualizes the no slipping of the capstan.

For ultra-fine wire Non-slip wire drawing machine D3ULT-10D

No slipping of capstan

■Correspond to the ultra thinning in the future.

By operating a dancer control on the haul-off capstan by making full use of the control technology of ultra low tension (From 0.5cN), our specialized technology, we have achieved the world's first Non-slip wire drawing process for the ultra-fine wire. Frictional area over the wire which is the work piece material vanishes by activating each capstan with no non-slip, and it controls scratches on the wire surface and/or the occurrence of breaking of wire. Moreover, stably providing the back tension of each wire drawing die over the ultra low tension area without getting affected by the low tension (front tension) in the upstream die over the capstan of non-slip is possible. Therefore, it is the future generation wire drawing machine that is able to correspond to the ultra thinning in the future.

■Maximum wire drawing speed 1000m/min

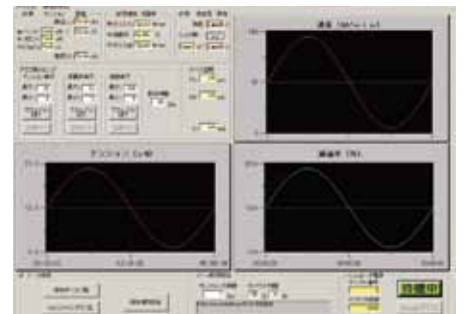
With the conventional slipping style wire drawing machine, the speed difference between the capstan and the actual line widens with increasing the process speed, and since it is difficult to avoid rewinding to the capstan, breaking of wire and the occurrence of scratches on the surface, we could not accelerate the processing speed. However, with the D3 series, it operates the capstan with non-slip activation, and the processing condition does not change at the time of line speed increase, which made the wire drawing processing speed faster easily. We will support your improvement of productivity with the ultra high-speed driving of 1000m/min even at the ultrafine range below wire diameter 15μm.

■Ideal reverse tension wire drawing method

Conduct guiding of die back and front, and input and output the line straight against the die. Moreover, it is the back tension wire drawing method that can provide the arbitrary back tension to each die steadily by high-precision tension control of the dancer with load rearranging structure. The quality of finishing line and yielding improve by using the reverse tension wire drawing since lowering the surface pressure over the die and the pull-out capacity can be measured.



●Non-slip capstan



●Line die management system screen

Streamlining of the die management

■Automatically control the capstan rim speed with adjusting to the die

Each capstan is individually controlled, and schemes the change of area reduction rate caused by the wastage of the die and such on a constant basis. Rigorous die hole diameter accuracy was required for the intermediate die by the necessity of strict maintenance of accurate slipping rate with the traditional slipping style wire drawing machine. However, using D3 series, using the die processed within a certain definite range becomes possible, and the die sorting operation gets easier.

■Automatically corresponds to arbitrary dies schedule.

Since the capstan activates with adjusting to the die, there is no machine reduction specification like the traditional slipping style. It will be automatically controlled to adjust to the capstan rim speed corresponds to the arbitrary dies schedule. Lower the back tension by using the ultra low tension control technology, and it becomes possible to reduce the number of die with dies schedule which is taken the area reduction rate higher. This will expand possibilities for multiproduct production of various wire diameters and wire drawing working process.

■Loading the actual area reduction rate monitoring function of each die

Since all the capstans are synchronously- controlled, you can measure the area reduction rate of all of the die in real time during the wire drawing process by the comparison of each capstan's rim speed. Until now, it was impossible to estimate the die exchanging period and such, except only by the indirect information such as finishing wire diameter measurement and wire drawing distance, but it makes possible to manage them individually by seeing the change of the die's area reduction rate. Also, traditionally, it required a measuring the wire diameter with a microscope after the wire drawing process since the wire diameter below 20μm were below the detection level of the sensor, but with D3 series, finishing wire diameter can be calculated by the measured area reduction rate, and it is also possible to prevent the occurrence of defective wire by stopping automatically when the calculated wire diameter exceeds the upper limit level.

■Specifications

Type	D3ULT-10D
Voltage source	Three-phase 200V50Hz/60Hz
Wire materials	Au-Ag-Cu-stainless steel-other metal wires
Wire diameter	below 30μm
Speed	Up to 1000 m/min.
Setup tension	from 0.5cN

●Please note that the appearance, specifications, capability of this product may change without notice due to the improvements.

Inquiry

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We offer testing by using various demonstration machines.