

Bag full of wisdom when you are in trouble

No.130

【Question】



When I purchased the YAMAWA Z-PRO Series - VUSP and VUPO M12×1.75 - as recommended by the distributor, I noticed that their overall length is longer compared to other taps of the same size. Could you explain why that is?

【Answer】

In our “Z-PRO” series, by using a semi-long shank design, the overall length is longer than other products in JIS standard length. This semi-long design provides advantages in chip evacuation and effective cutting fluid supply.



【Explanation】

Examples of problems with spiral fluted taps

When chips interfere with the holder, chip evacuation is hindered, which may cause problems such as chips wrapping around the shank. Furthermore, with external lubrication, if the gap between the workpiece and the holder is too small, cutting fluid may not be supplied adequately, leading to premature wear or chipping.

Examples of problems with spiral pointed taps

YAMAWA recommends a reserve motion of the chamfer length + 3 full threads.

How to prevent breakage problem of point taps 

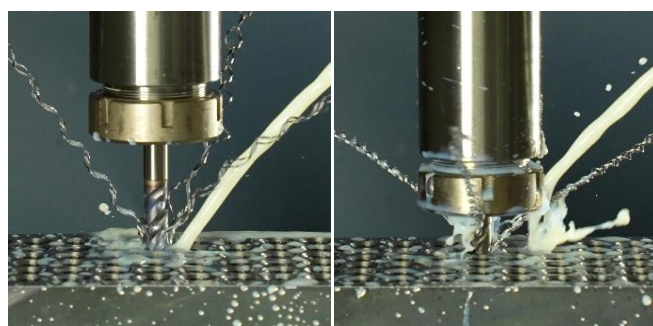
If the gap between the workpiece and the holder is small, sufficient cutting fluid may not be supplied, which can lead to premature wear or chipping.

Our Z-PRO products (VUSP and VUPO) adopt a semi-long design, which can help prevent the types of troubles mentioned above and enables stable, high-quality tapping. For details, please see the photos and comparison table below!



Photo comparing VUSP (Z-PRO) with SP (JIS standard)

Z-PRO VUSP **SP (JIS standard length)**



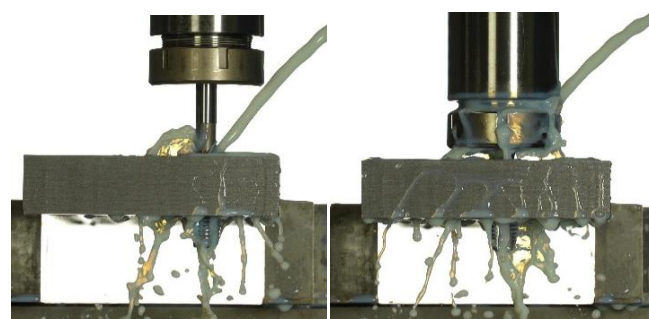
M12×1.75 Machining length : 1.5D
Holder gripping length : 31mm

	Overall length	Projected length from the holder	Machining Length	Gap between workpiece & holder
JIS Products	82 mm	51 mm	22.4 mm	28.6 mm
Z-PRO Product	110 mm	79 mm	22.4 mm	56.6 mm

Machining length 22.4 mm = 18 mm (tapping length) + approx. 4.4 mm (2.5 thread chamfer)

Photo comparing VUPO (Z-PRO) with PO (JIS standard)

Z-PRO VUPO **PO (JIS standard length)**



M12×1.75 Machining length : 1.5D

	Overall length	Projected length from the holder	Machining Length	Gap between workpiece & holder
JIS Products	82 mm	51 mm	32 mm	19 mm
Z-PRO Product	110 mm	79 mm	32 mm	47 mm

Machining length 32 mm = 18 mm (tapping length) + 14 mm (5 thread chamfer + 3 full threads)