

THREDFLOER APPLICATION DATA – CONTINUED

SURFACE TREATMENT / LUBRICATION SELECTOR

Surface treatments and proper lubrication are very important and can have a major effect on tap life and threaded part quality. Use the following application guidelines to determine the correct treatment and lubricant for the material being tapped.

MATERIAL CATEGORY	MATERIAL TYPE	TAP TREATMENT	LUBRICATION RECOMMENDED
SOFT	Aluminum (plate or wrought material), Diecast Zinc, or wrought Brass	Bright finish for most application, or add hard chrome for tap wear and lubricity	Water soluble 5:1 or light tapping oil.
SOFT AND ABRASIVE	Diecast Aluminum	Nitride, Super TiN, or Bal-Plus	Water soluble 5:1 or light tapping oil.
	Copper	Balwear or Nitride/Balwear	
INTERMEDIATE HARDNESS	Mild Steel	Nitride or Super TiN	Extreme pressure rated tapping oil with high sulphur and high chlorine content. Balax has developed Bal-Tap "S", a specialized tapping oil, designed specifically for cold forming taps.
	300 Series Stainless	Nitride/Steam Oxide or Super TiN	
HARD MATERIALS	Alloyed Steels and 400 Series Stainless	Nitride/Steam Oxide or Super TiN	

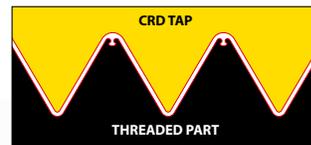
CONTROL ROOT DIAMETER "CRD"

The root diameter of a forming tap may be ground to a specific size or diameter to serve several functions:

- Smooth or flatten the "U" shaped cup in the crest of the formed thread to reduce cross-threading.
- Smooth the crest of the thread to eliminate burrs or roughness and to improve the appearance of the thread.
- Size the after-tap minor diameter to a specific tolerance to minimize the effects of pre-tap hole size variations.
- Works best for thin walled stampings or diecast parts where some porosity is present.

The root diameter for a "CRD" Thredfloer Tap is calculated and carefully ground to a definite dimension to perform the burnishing or sizing of the thread crest. Most common application is to size the "CRD" for 65-75 percent thread height.

Consult with a Balax "Application Engineer" to confirm the intended use and specifications for any "CRD" taps you wish to purchase.



DIECAST CORED HOLES

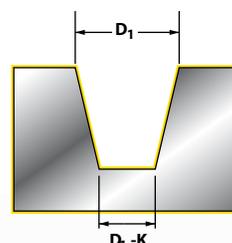
Diecast cored holes can be tapped directly with cold forming taps without the need for pre-tap drilling.

The procedure for determining core pin size is as follows:

1. Determine D_1 , which is the diameter of the hole at the top, by selecting the 65 percent thread pre-tap hole size from the applicable Thredfloer hole size chart.
2. Determine the diameter of the hole at the bottom by subtracting the following constant "K" from the D_1 hole size diameter at the top.

Note: The draft angle or core pin taper should be kept as straight as possible to provide uniform after-tap thread percentage. The above procedures will result in an after-tap hole with 65% thread at the top and 100% thread at the bottom.

TAP THREAD PITCH	"K" VALUE
10 TO 14 THREADS PER INCH	.012"
15 TO 25 THREADS PER INCH	.010"
26 THREADS PER INCH OR MORE, AND TAP SIZE #4 (M3) OR LARGER	.007"
26 THREADS PER INCH OR MORE, AND TAP SIZE SMALLER THAN #4 (M3)	.004"



D_1 = Hole diameter at top = 65% hole size from charts

$D_1 - K$ = Hole diameter at bottom