



上荣超音波

1. 超声焊接结构



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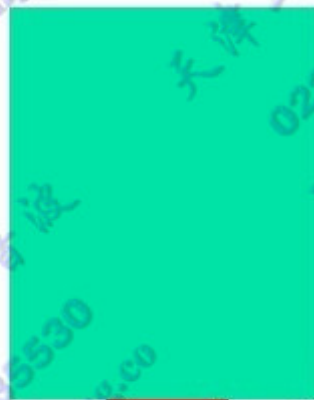


焊接筋的角度

120°



90°



60°



45°

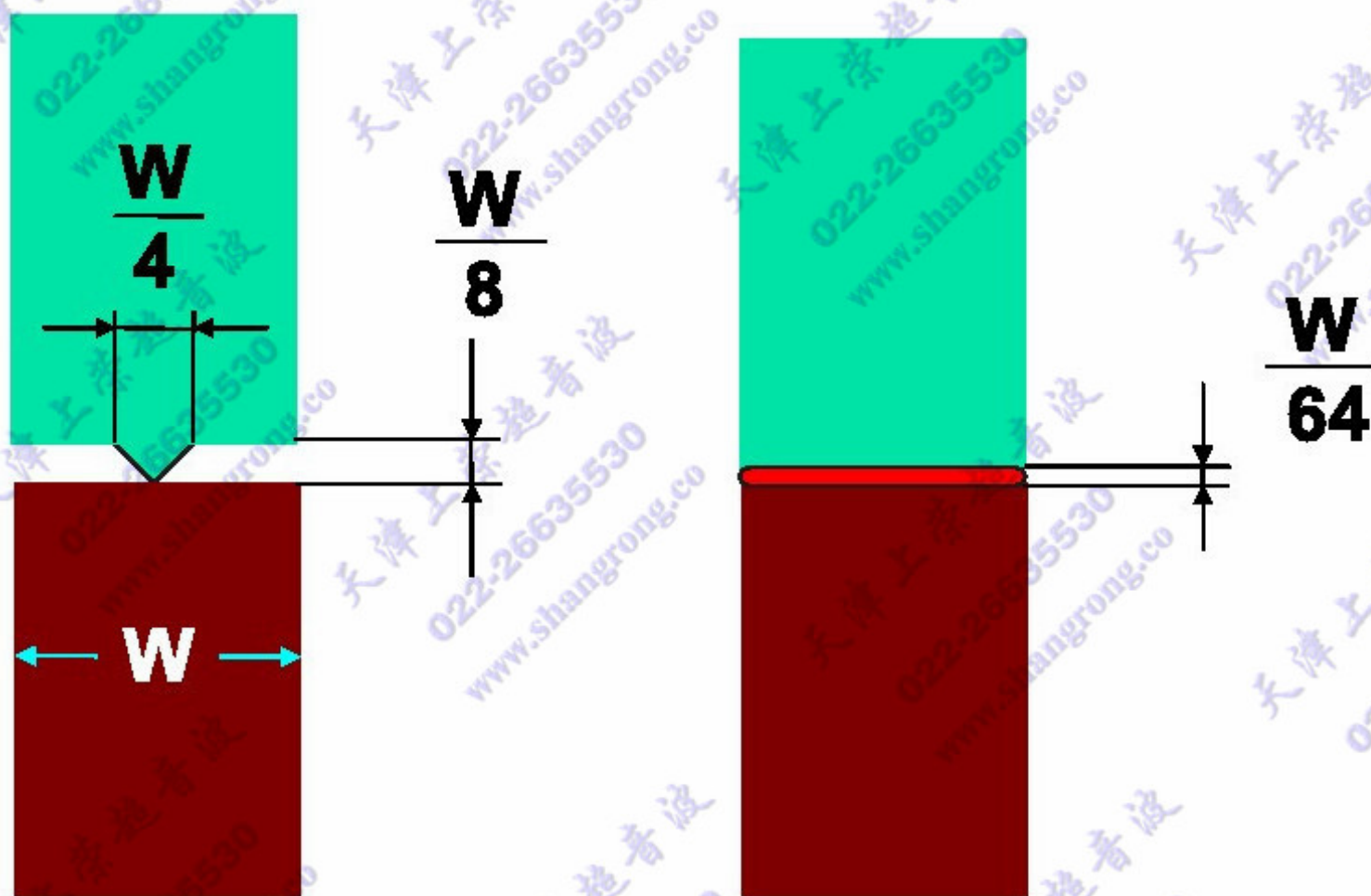




超声焊接结构

■ 基本型

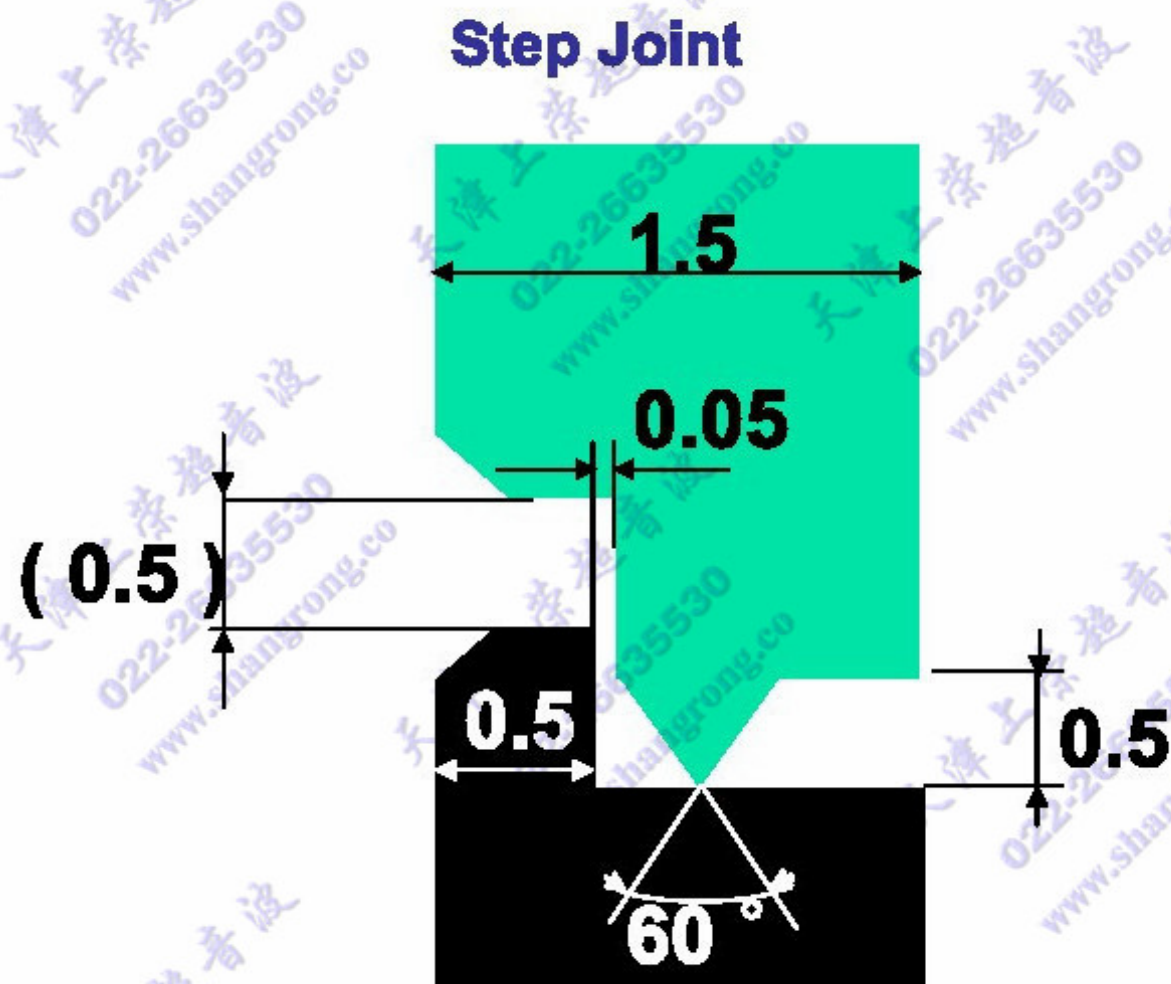
Basic Energy Director





超声焊接结构

■ 阶梯型



超声焊接结构

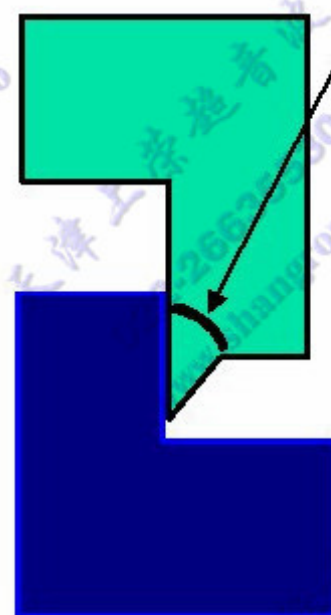
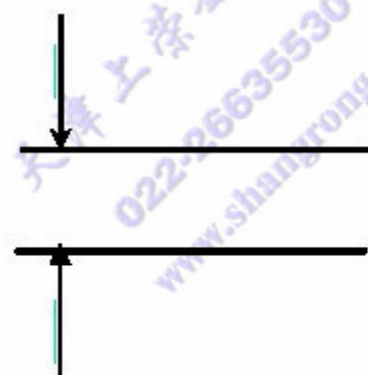
■ 阶梯型

$\frac{W}{8}$
0.010" to 0.025"
(0.25 to 0.64mm)

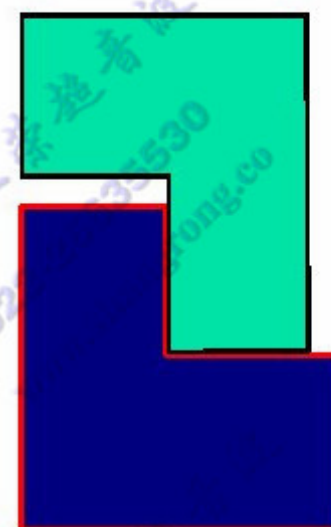
Chisel Edge

0.060"
(≤ 1.50 mm)

Chisel energy
director 45°
0.015 to 0.019" tall
(0.4 to 0.5mm)



Before

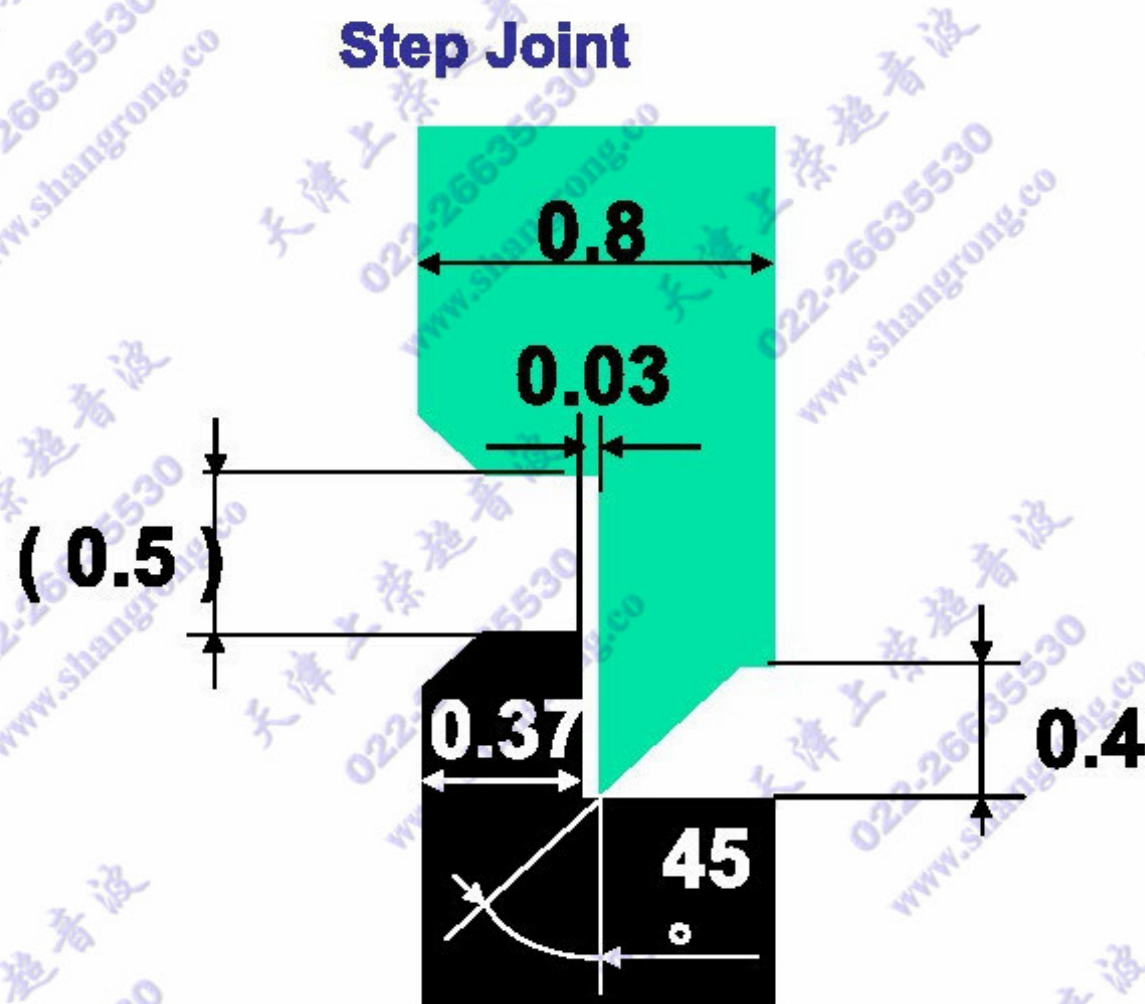


After



超声焊接结构

■ 阶梯型

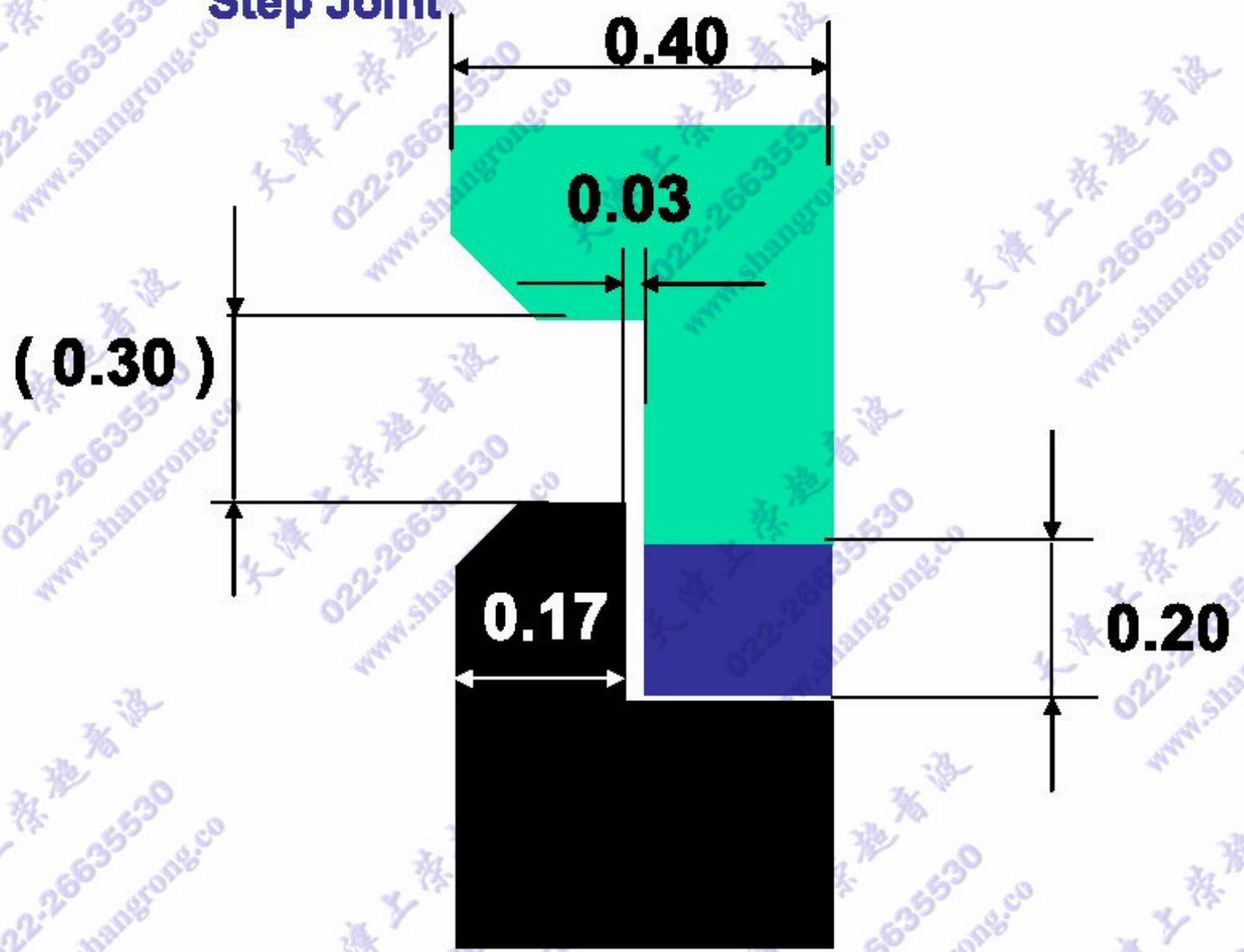




超声焊接结构

■ 阶梯型

Step Joint

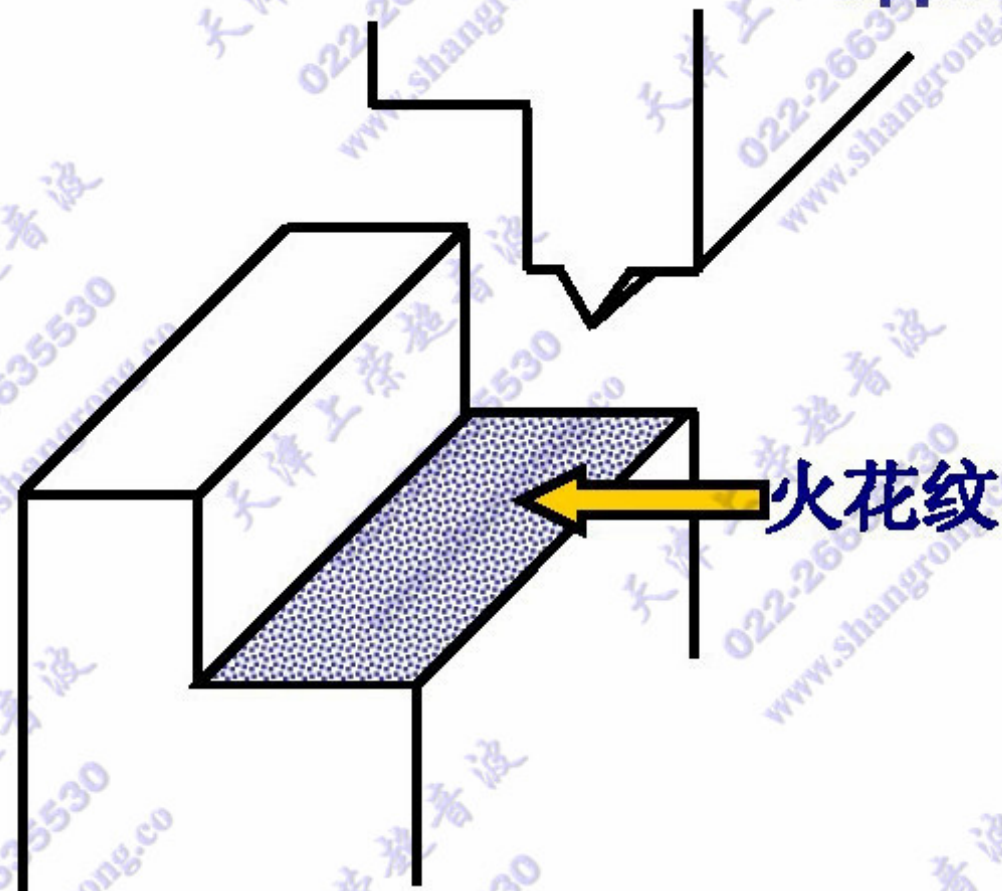




超声焊接结构

■ 阶梯型

Energy Director with
Opposing Textured Surface



焊接筋高

火花纹凹

0.13~0.29

75 μm

0.30~0.44

115 μm

0.45 以上

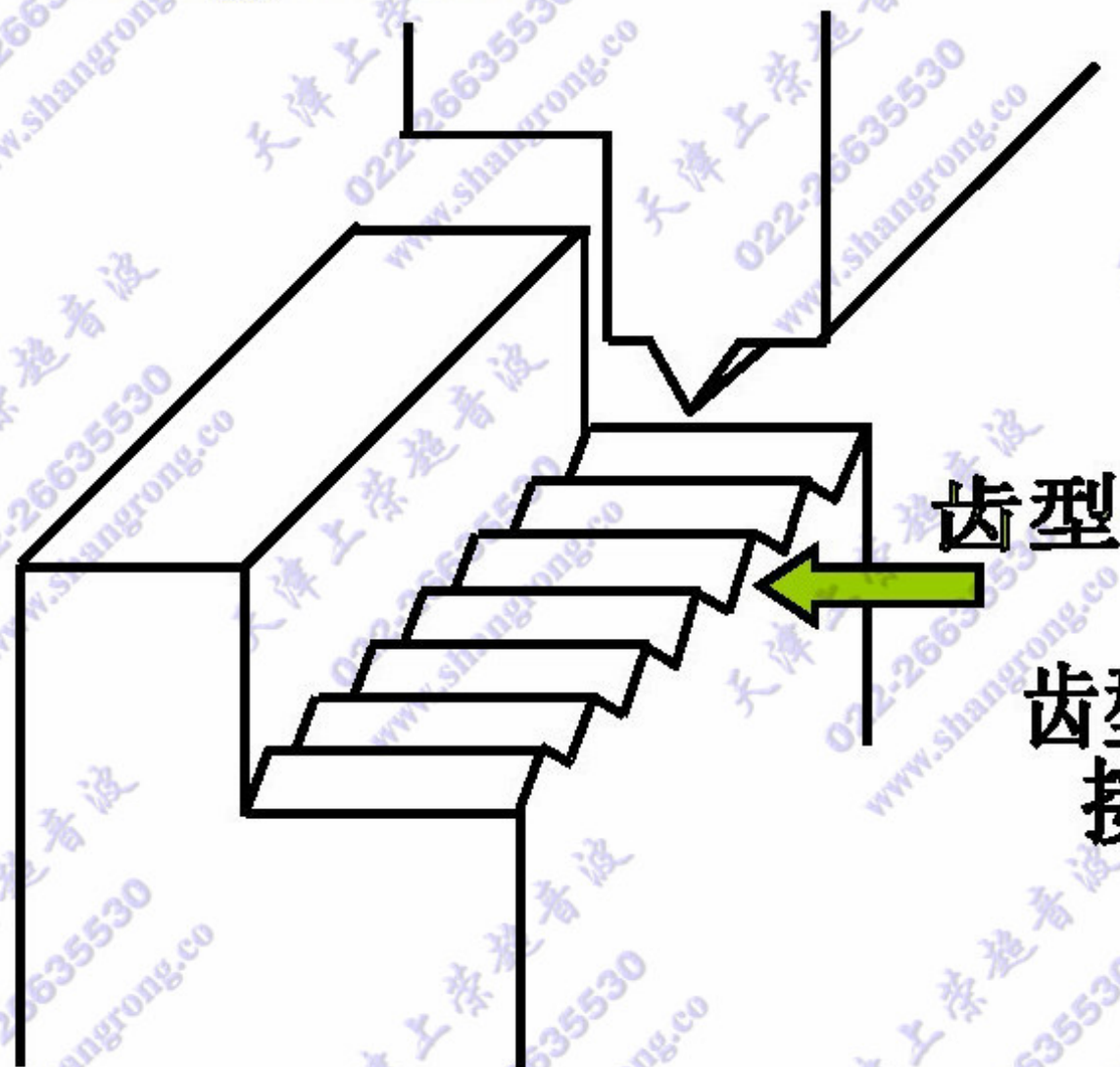
150 μm



超声焊接结构

■ 阶梯型

Continuous Criss-Cross
Energy Director



齿型

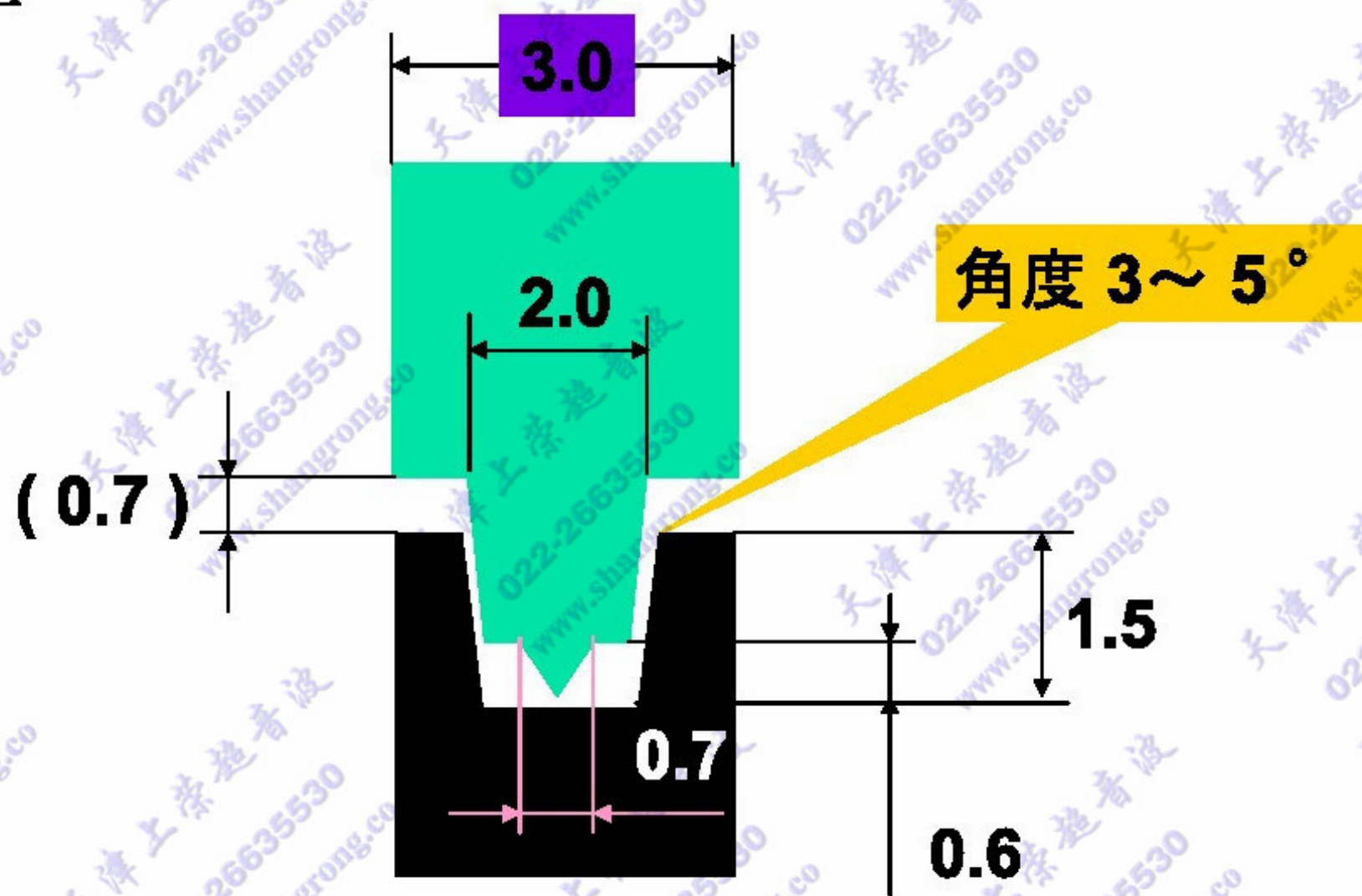
齿型高度约焊
接筋的60%



超声焊接结构

■ 榫槽型

Tongue & Groove

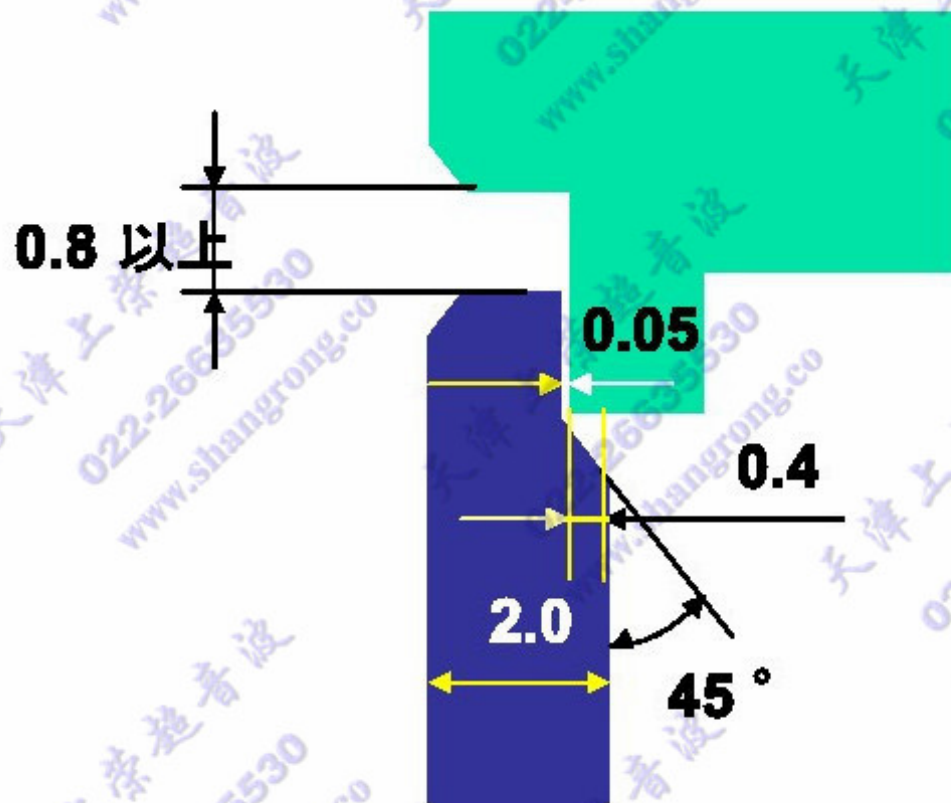




超声焊接结构

■ 剪切型

Shear Joint



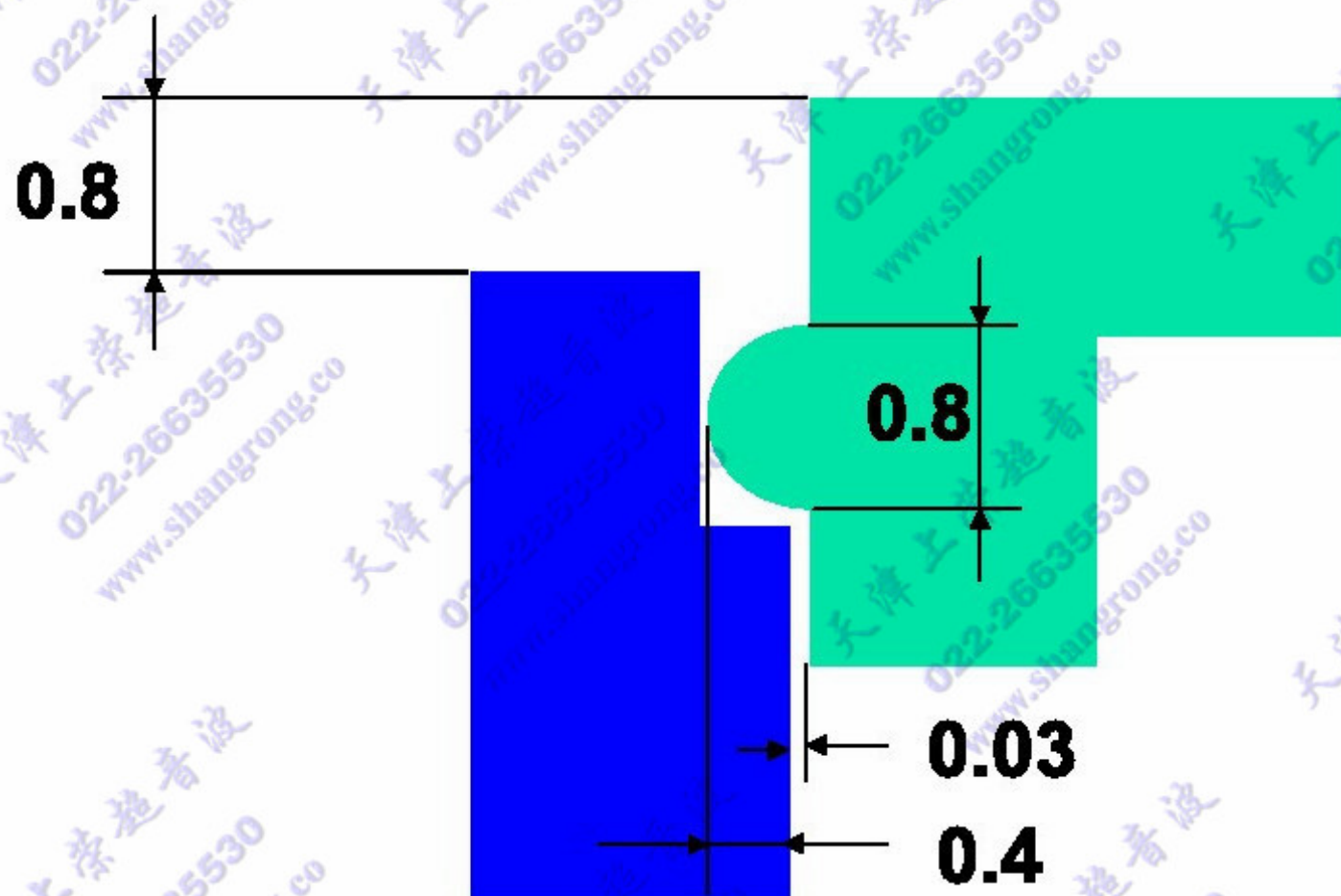
Maximum Part Dimension	Interference per Side (Range)	Part Dimension Tolerance
Less than 0.75" (18mm)	0.008" to 0.012" (0.2 to 0.3mm)	± 0.001" (± 0.025mm)
0.75" to 1.50" (18-35mm)	0.012" to 0.016" (0.3 to 0.4mm)	± 0.002" (± 0.050mm)
Greater than 1.50" (35mm)	0.016" to 0.020" (0.4 to 0.5mm)	± 0.003" (± 0.075mm)



超声焊接结构

■ 剪切型

Shear Joint

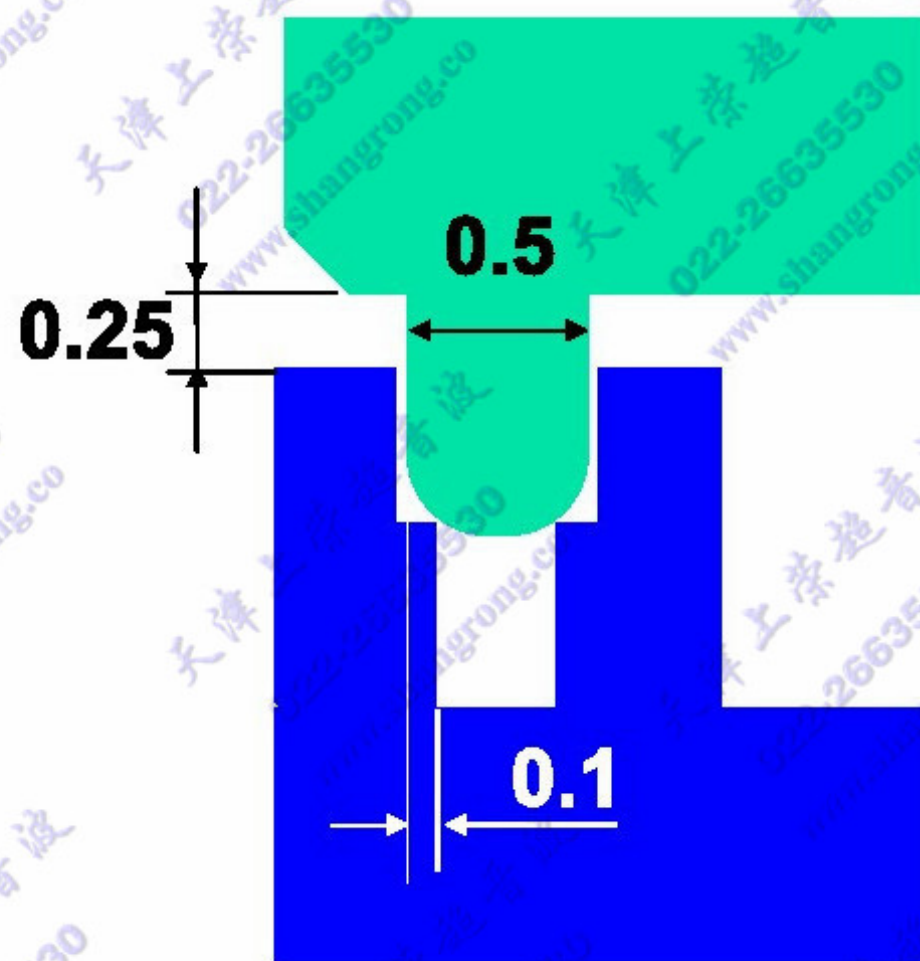
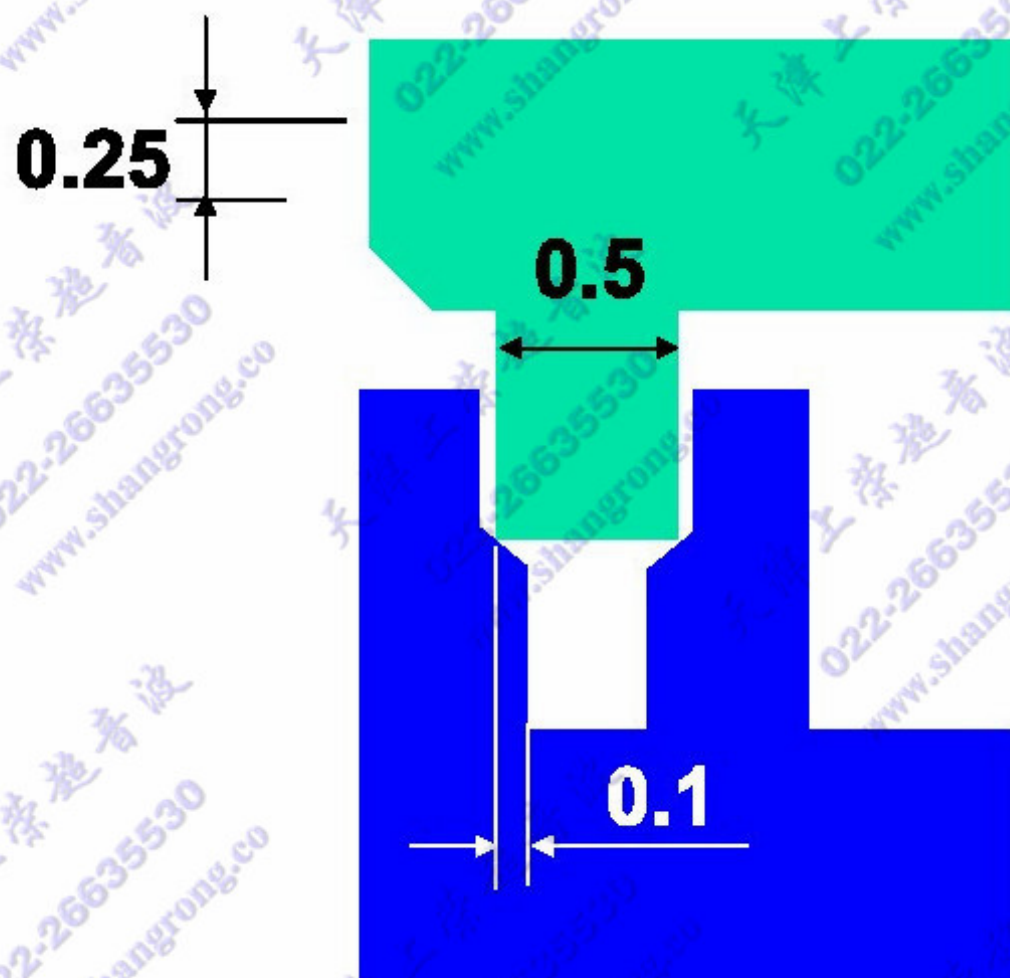




超声焊接结构

■ 剪切型

Shear Joint

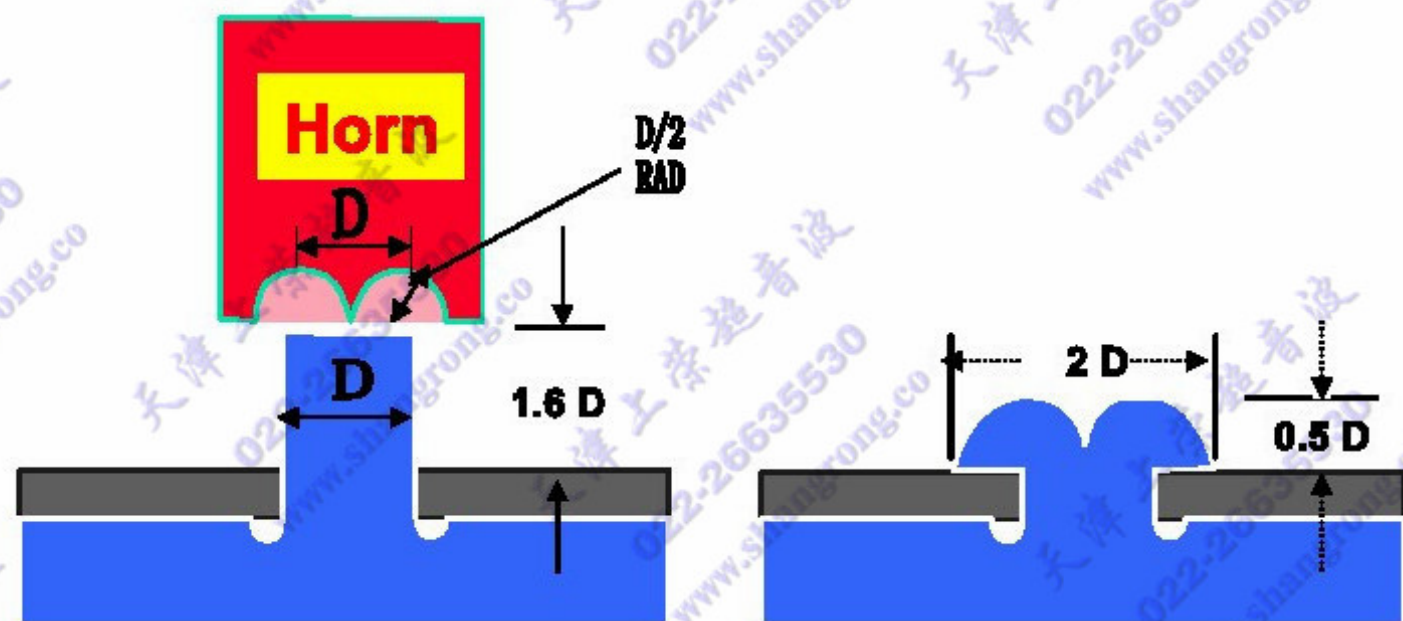




超声铆接结构

■ 基本型

Standard Profile



Before

After

$D > 2$

D = Stud diameter

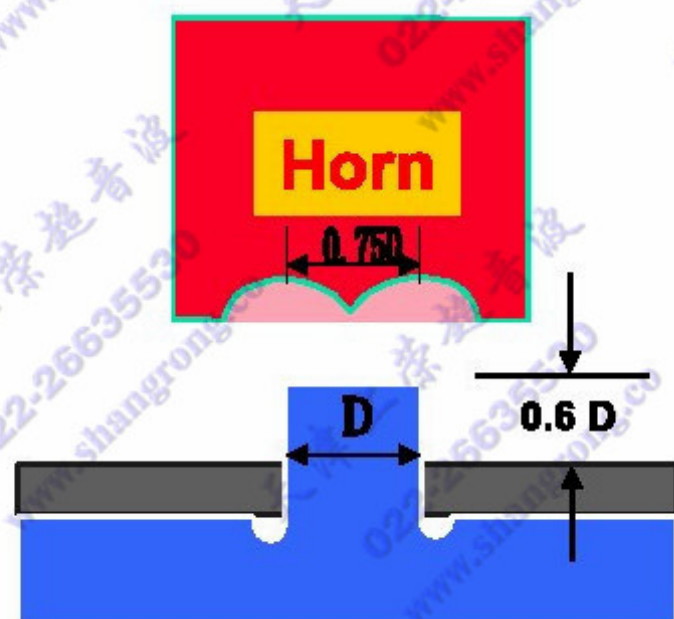


超声铆接结构

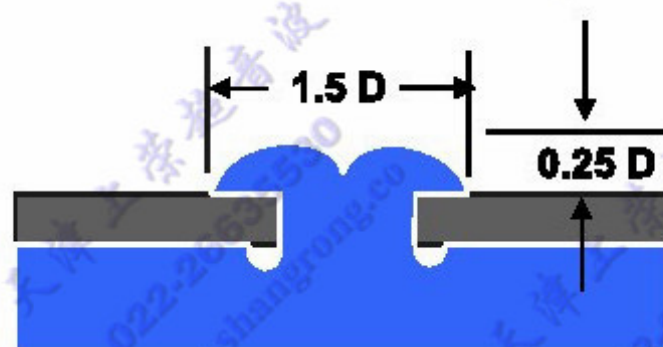
■ 低矮型

Low Profile Stake

$D/2$



Before



After

$D \geq 2$

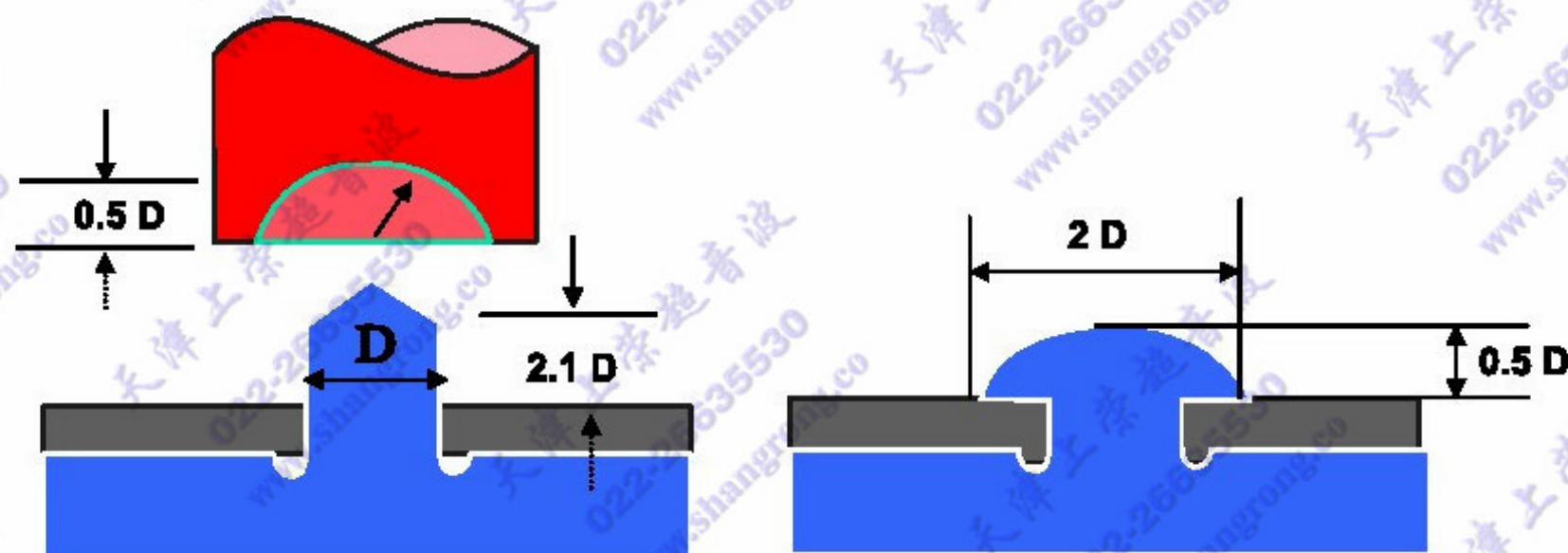
D = Stud diameter



超声铆接结构

■ 半圆型铆接

Dome Stake



Before

After

$D > 1-5$

$D = \text{Stud diameter}$

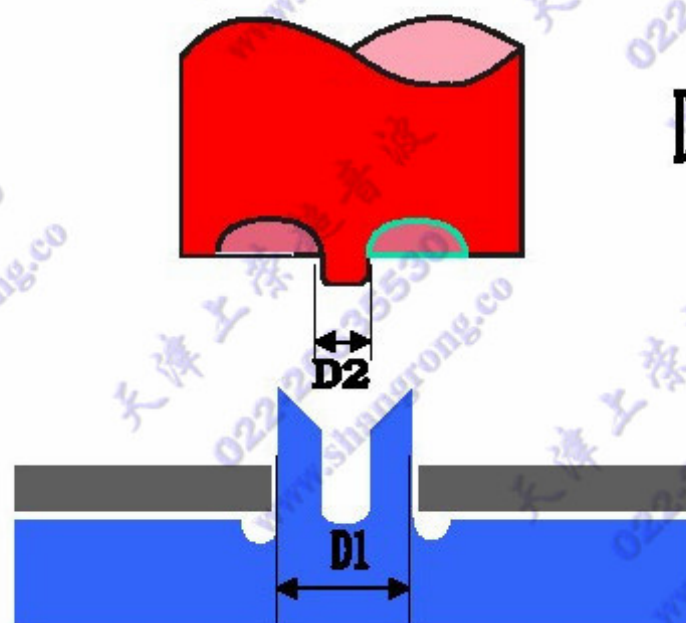


超声铆接结构

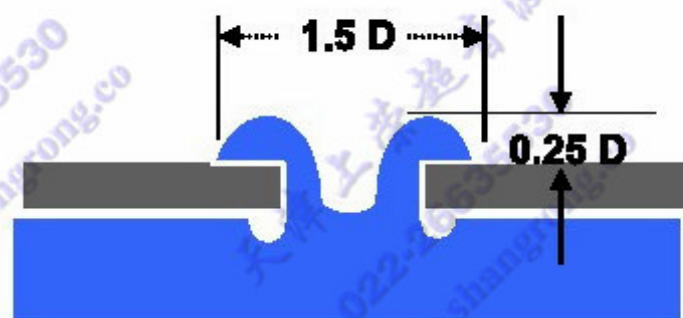
■ 中空型铆接

Hollow Stake

$$D2=D1/2$$



Before



After

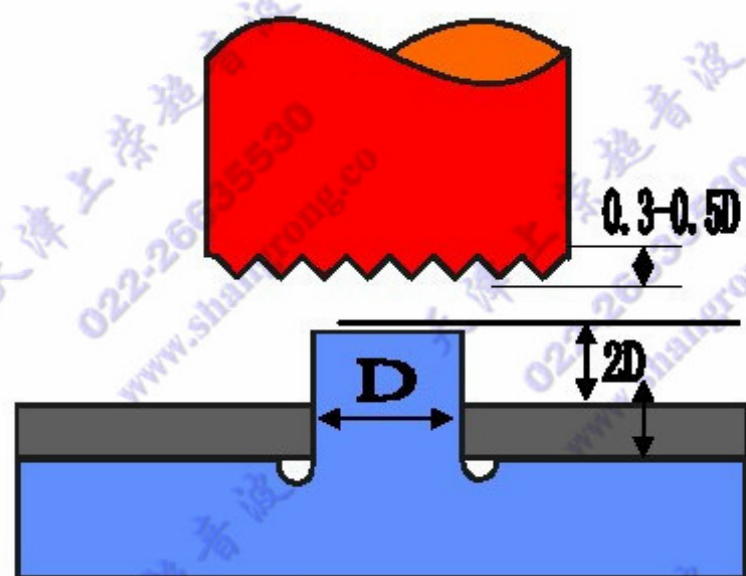
D = Stud diameter



超声铆接结构

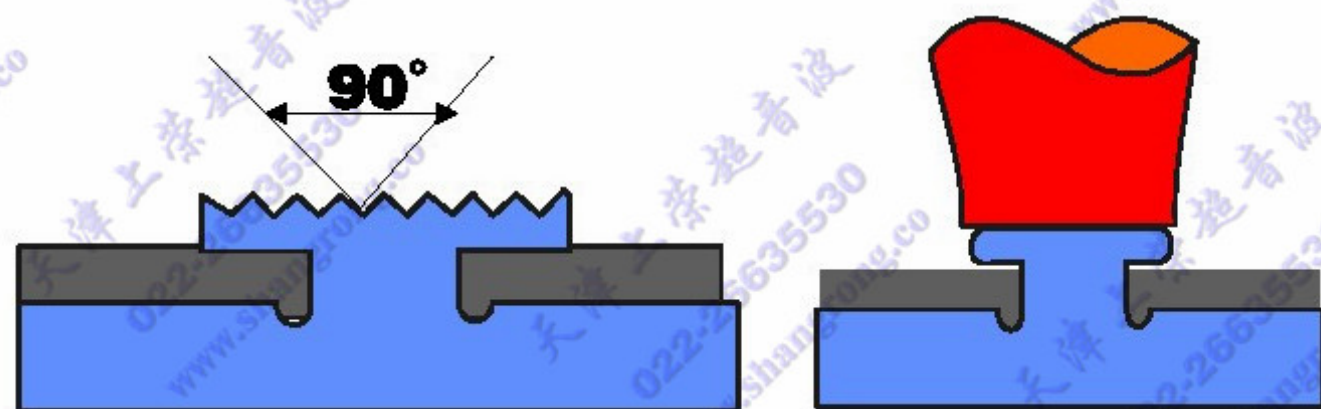
■ 高压型铆接

Knurled Stake



Before

High Pressure Stake



$D > 0.5$

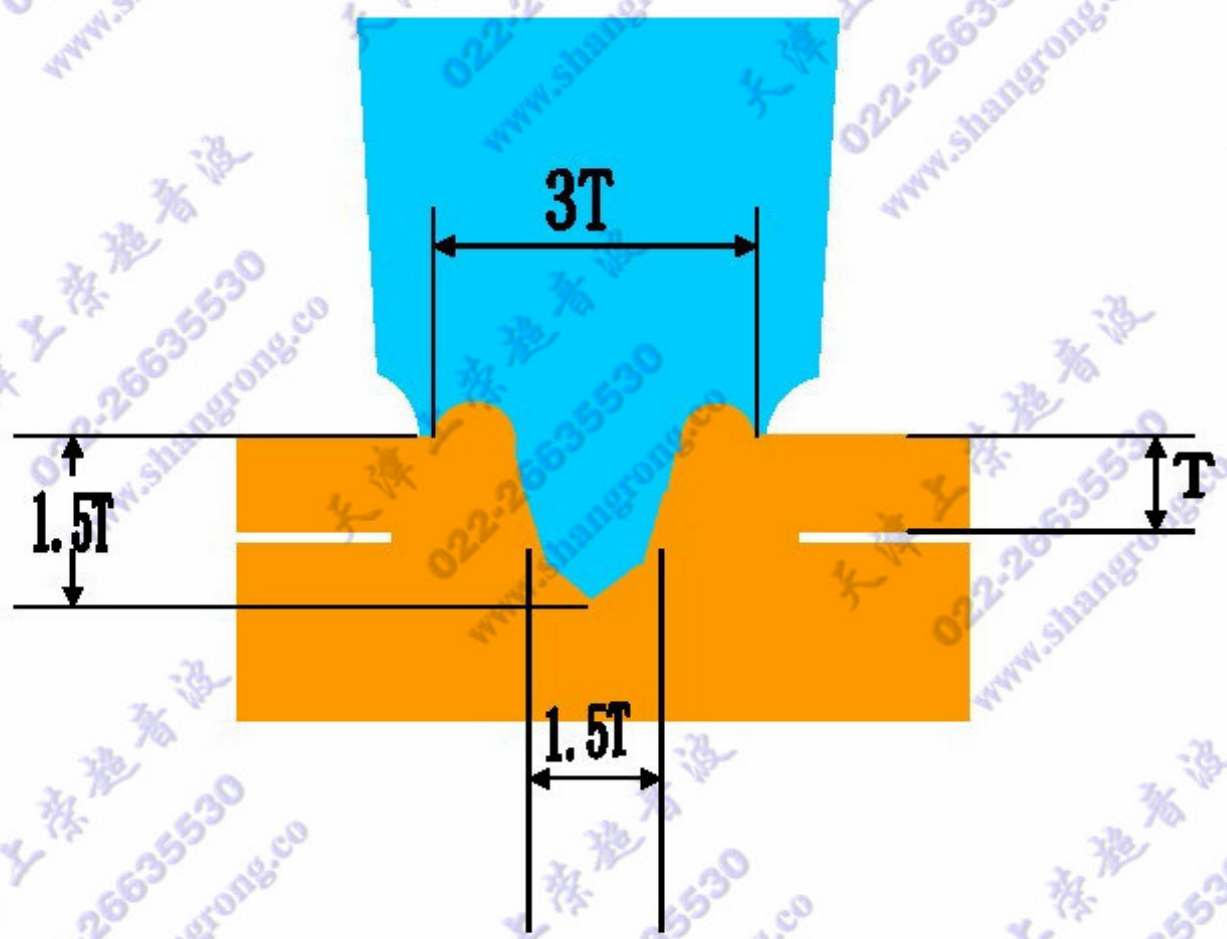
After



超声铆接结构

■ 点焊

Spot Welding

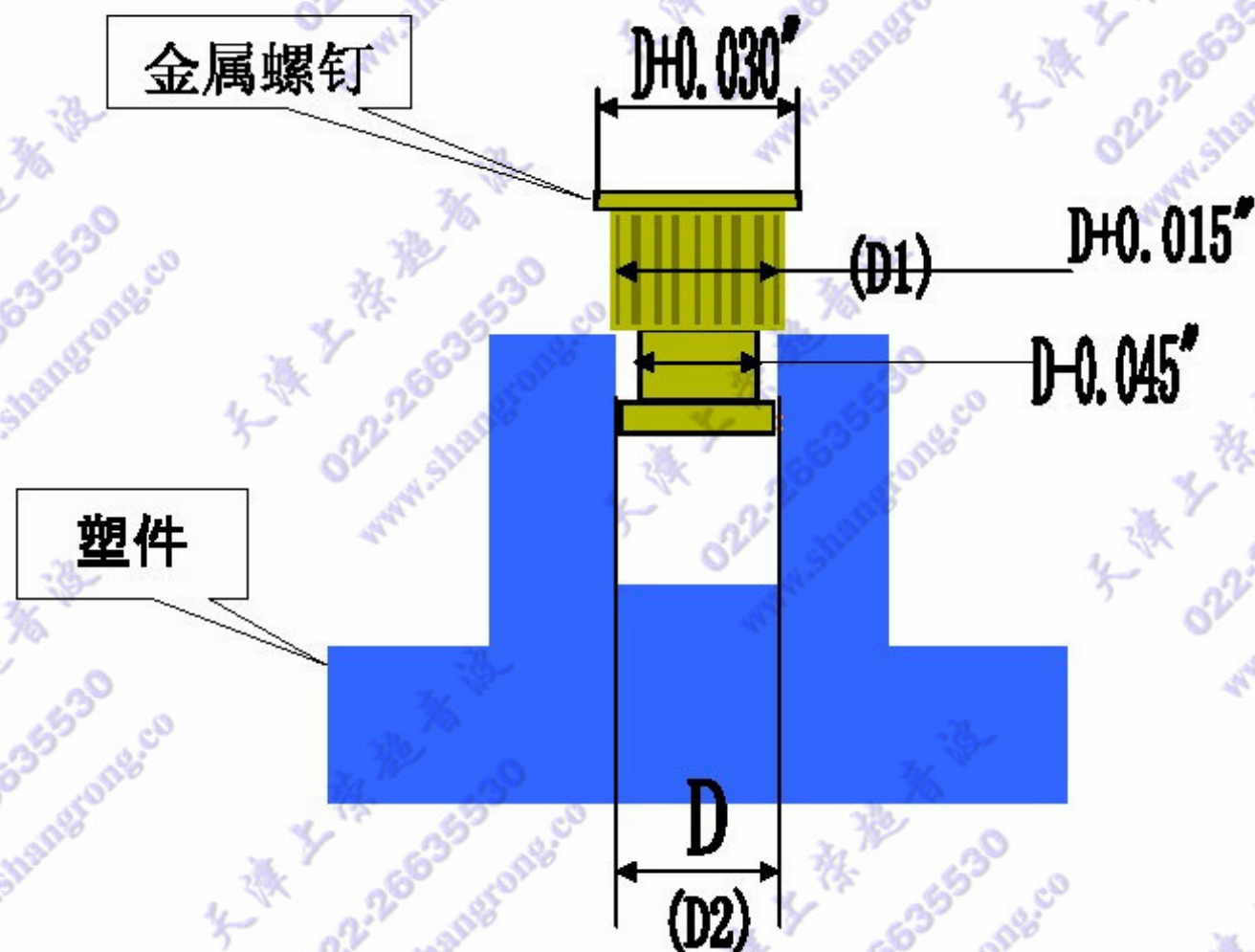




超声嵌插结构

■ 嵌插

Insertion



$D=1/4''$ 以下—1000W
 $D=1/2''$ 以下—2000W



超声嵌插尺寸

Metric thread	Length of bushing in mm	Diameter D1	In mm D2	Insertion hole in mm (rec.value)	Threaded bush
M3	5.8	3.9	4.7	4.0	
M4	8.2	5.5	6.3	5.6	
M5	9.5	6.3	7.1	6.4	
M6	12.7	7.9	8.7	8.0	
M8	12.7	9.5	10.2	9.6	

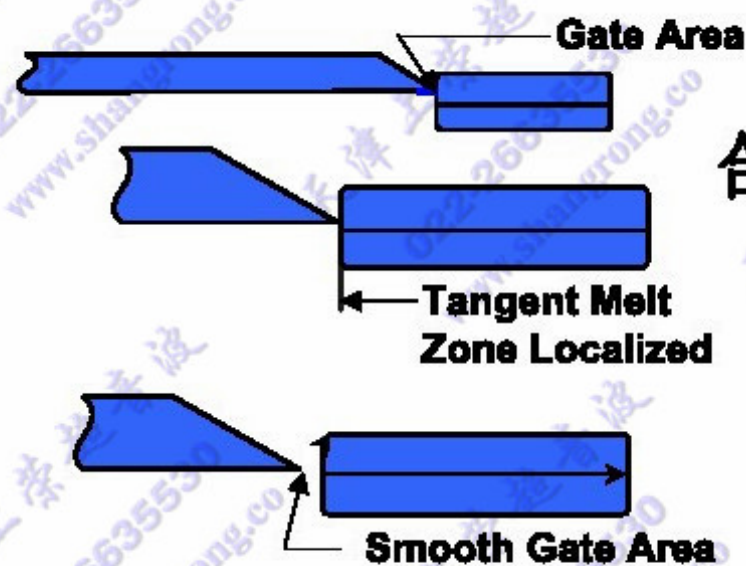


超声嵌插尺寸

Metric thread	Length of bushing in mm	Diameter D1	In mm D2	Insertion hole in mm (rec.value)	Threaded bush
M3	5.5	4.0	4.7	4.3	
M4	7.5	5.2	6.15	5.65	
M5	9.0	6.4	7.35	6.85	
M6	10.0	7.7	8.75	8.25	
M8	12.0	9.7	11.3	10.8	

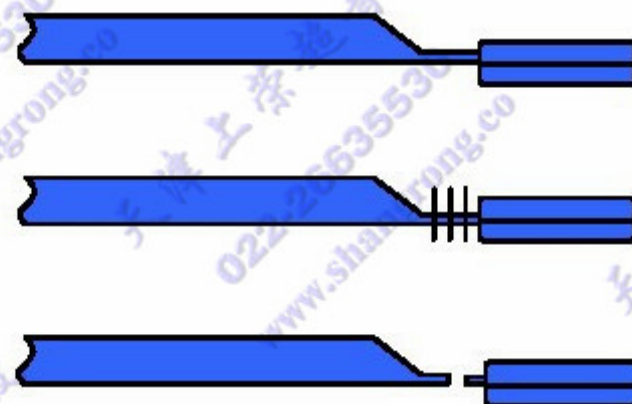


超声浇口切除结构



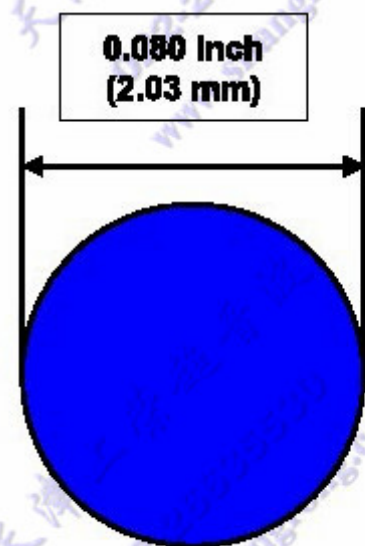
合理设计

Gate Design



不合理设计

■ 浇口尺寸



Gate Sizes

