

Leading manufacturer of Gun Drills

EXPERTISE  
DURABILITY  
PRECISENESS

TOOL ZONE GUN-DRILLS



**TOOL ZONE**  
2015

昆山腾振精密机械有限公司

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**TOOL ZONE**  
**GUNDRILL**  
**CATALOGUE**

[www.tzgundrill.com](http://www.tzgundrill.com)

Tool Zone Kunshan Co., Ltd.

## 公司介紹

# TOOLZONE

### 昆山騰振精密機械有限公司



是专门制造深孔加工之枪钻生产公司。在15年丰富的枪钻工具制造及汽车零件深孔加工经验基础上，居中国国内深孔加工及枪钻研发之领导地位。

因着加工枪杆而研发出的枪钻，以汽车产业、航空制造业为首作为主要加工工具，进而发展到油压机械、模具、电气工业等各种用途后，在技术革新、生产效能的提升上有划时代的贡献。

昆山騰振精密機械有限公司专门从事特殊枪钻，如CHIP-BREAKER枪钻 ( Chip-Breaker Gun Drills )、嵌入式枪钻 (Insert Gun Drills), 整体硬质合金枪钻(Solid Carbide Gun Drills)、PCD聚晶钻石枪钻( PCD Tipped Gun Drills )之制造。因着丰富专业的研发技术使我们能立即满足客户的各种需求。

昆山騰振精密機械有限公司以最具竞争力的价格，最优良的质量，精确的交期为第一要务，并持续以技术开发强化竞争力，承诺作为世界级专业工具制造商之领导先锋。

## INTRODUCTION

**S**pecialized in manufacturing certain tools precisely and delicately. 15 years of professional expertise and experience in producing the gun drill tools and deep-hole drilling service is our foundation as the market leader in China.

Gun-drilling was initially developed for drilling gun barrels. Armament manufacturing continues to be a common use of this process, and then application to other common industries include energy, oil and gas exploration, engines, diesel fuel components, and die casting. Nowadays, the gun-drill technology has been well renovated and made great contribution to production efficiency.

Tool Zone not only produced standard drills like single/double lid gundrill but also the exclusive Chip-Breaker Gun Drills, Indexable Insert Gun Drills, Solid Carbide Gun Drills, and PCD tipped single flute/twin flute Gun Drills. Owing the professional technical skills, we can meet the variety needs from customers. Tool Zone take the "the most competitive price, the best quality, the accurate delivery" as the first priority. We promised to be the top-rated tool maker of the world and enhance our competition through consistent technical development.

## 腾振精密的枪钻优势

### 枪钻原料优势 Superiority of Component

一般而言,枪钻由刀头,刀杆及刀柄构成。目前腾振精密的刀杆是进口德国质量最优良之刀杆而制造成最优质的枪钻。

The gun drill generally comprises three main components: a hard-wearing carbide head, a heated treated alloy shank and a steel driver, typically silver brazed together into one precision unit. Tool Zone is using the best quality tubes from Germany and carbide head from Switzerland to ensure the best performance and optimal tool quality.

### 枪钻设计能力优势 Superiority of Design Ability

本司因具备15年专门生产枪钻的设计技术团队及实际加工经验,能针对被加工品的材质特性设计制造适合的枪钻。

With more than 15 years of knowledge and experience regarding tool design and deep hole drilling experience, we can design the best appropriate gun drill after considering the materials of your workpiece and workshop capability.

### 枪钻加工条件建议 Recommendation of Drilling Condition

枪钻本身的性能虽然很重要,但客户所拥有的深孔加工机的加工条件也相当重要。腾振精密的技术团队能以丰富的加工经验,根据加工设备的特质可能造成的问题点调整机器设定,提出优化的全方位解决方案(Total Solution)

It is not only the gun drill performance, but the drilling conditions of your deep-hole drilling machine are also very important. As foundation of the abundant drilling experience, Tool Zone is capable of identifying the possible problems according to your parameter setting and machine capability, and then providing the total solution to reach the optimal performance.

SUPERIORITY OF GUN DRILL

TOOLZONE

各种套筒顶针加工

Various Sleeve Pin

各种模具加工(如塑料模具,金属压铸铸件等)

Various Plastic Dies, Die Casting Mold

汽车产业(如曲轴,活塞杆,轮轴)

Crank Shaft, Connecting Rod, Axle of Automotive Industry

主轴,活塞销,减震器等

Main Shaft, Piston Pin, Shock Absorber

汽缸,液压歧管

Cylinder Block, Hydraulic Manifold

## 主要加工品 Major Applications

航空业零配件,如飞机零件

Air Craft Parts

电机电子零配件

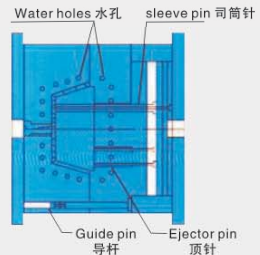
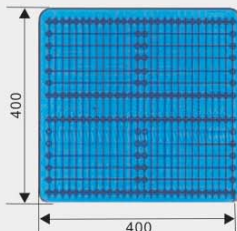
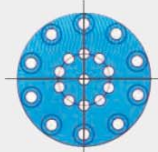
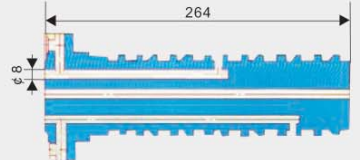
Parts of Electric Equipments

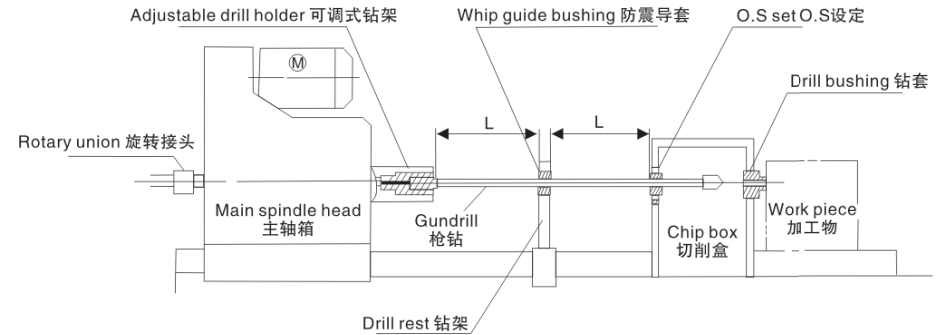


# 枪钻应用实例

## GUN DRILLING APPLICATIONS

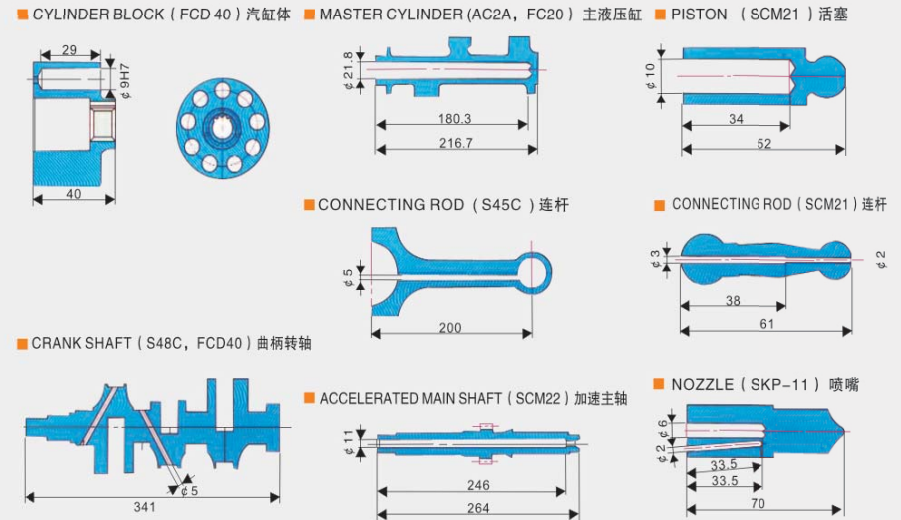
昆山腾振精密使用本公司自行制造的枪钻为各式产业器具及制品进行深孔加工服务  
Tool Zone is using our very own made gun drilling tools providing drilling service  
for the following industry utensils and products.

规格 Specifications	枪钻应用实例 Applications
Applications 应用	<p>Molds (plastic, Die cast &amp; etc.) Hydraulic Manifolds, Tube Sheets, construction machines. Work-pieces required not only multi holes but also a single hole.</p> <p>各种模具（塑胶模具，冲压模具等）液压系统分路阀箱，管板，施工机械。被加工物不仅可以是多孔的，也可以是单孔的。</p>
Applications 应用	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>■ PLASTIC MOLD(S45C)</p>  <p>Water holes 水孔 sleeve pin 套筒针 Guide pin 导杆 Ejector pin 顶针</p> </div> <div style="text-align: center;"> <p>■ HEAT EXCHANGER</p>  <p>400 400</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>■ PISTON (S25C)</p>  </div> <div style="text-align: center;">  <p>264 φ8 φ5</p> </div> </div>



## 枪钻应用实例 Applications

Automobile  
(Crank Shaft, Connecting Rod, Piston Pin, Axle Main Shaft, Shock Absorber etc.)  
Air Craft, Electric Industries.  
汽车(曲柄转轴，连杆，活塞销，轴主轴，减震器等) 航空器，电器制造业。



# CUTTING DATA FOR GUN DRILLING

枪钻加工切削条件

被削材名	热处理	Hardness硬度		切削速度 (m/min)	移送速度(mm/rev)
		HB	HRC		
快削碳素钢					
S10C-S15C	冷间引拔	160-190	(5)-(1)	130	图1 参照
S30C-S50C	冷间引拔	200-230	(12)-20	100	
S35C-S50C	退火处理	250-300	25-32	80	
碳素钢					
S10C-S35C	烧钝	110-120		130	图2 参照
S10C-S50C	烧钝	120-185	-(9)	130	
S50C-	烧钝	170-200	(5)-(13)	100	
S50C-S30C	退火处理	210-250	(16)-24	90	
S30C-S55C	退火处理	260-310	26-33	70	图2 参照
S50C-	退火处理	320-375	34-40	50	
S50C	退火处理	380-440	41-47	40	
合金钢					
Scr.SNC	烧钝	150-230	-(20)	90	图2 参照
SNCM,SCM					
SMn					
合金钢		240-310	23-33	70	图2 参照
Scr.SNC		315-370	34-40	50	
SNCM, SCM	烧钝	380-440	40-47	40	
SMn	退火处理	450-500	48-51	30	
特钢					
SC 材料等		140-180	-(8)	100	图1 参照
	退火处理	190-240	(11)-(22)	90	
工具钢	烧钝	150-200	-(13)	70	图3 参照
SKS, SKD	烧钝	210-300	(16)-32	50	
Stainless 钢 (不锈钢)	烧钝	150-200	-(13)	70	图3 参照
Ferrite 系 (铁系)	烧钝	160-220	-(18)	50	
SUS405 .430					
Austenite 系 (奥氏体系)					
SUS304 .305					
Martensite系 (马氏体系)	烧钝	160-200	-38	70	
SUS403.410	退火处理	300-350	32-38	50	
轴承钢	烧钝	150-210		70	
耐热合金				20	
高速度钢	烧钝	210-285	(16) - 30	50	
Gray铸铁 (灰铸铁)		110-180		90	图4 参照
FC 10-35		190-220		80	
		220-260		70	
Ductile 铸铁 (可塑性铸铁)		120-170		80	
FCD 10-35		180-240		65	图5 参照
		240-280		55	
		260-320		40	
可锻造铸铁					
FCMB		110-180		90	图4 参照
FCMP		190-220		80	
		220-260		70	
Aluminum合金 (铝合金)		500kg 荷重		180	图4 参照
铸物 Die Casting (压铸模)		40-100		180	
铜合金		120-160		<150	图4 参照
		160-205		<120	图5 参照

图1: 炭素钢 Carbon Steel

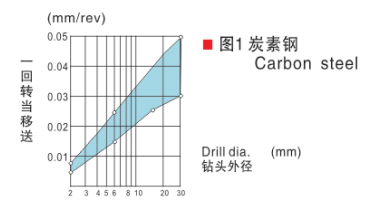


图2: 合金钢 Alloy Steel

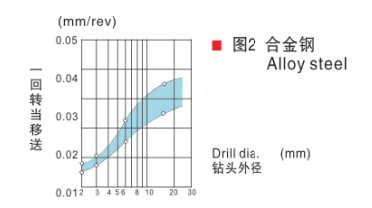


图3: 工具钢 Tool Steel 特殊钢 Die steel

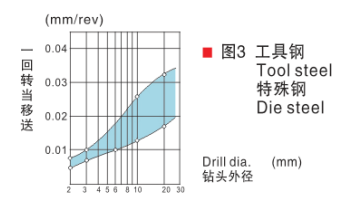


图4: Gray铸铁 Gray cast iron Aluminum合金 Aluminum Alloy

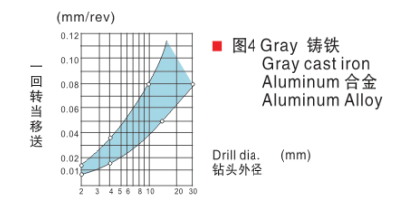


图5: Ductile 铸铁 Ductile cast iron 可锻造铸铁 Maileable cast iron

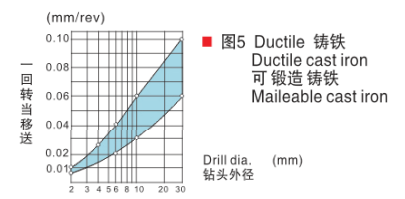
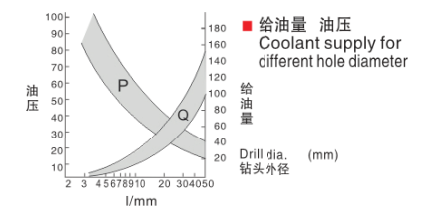


图6: 给油量油压 Coolant supply for different hole diameter

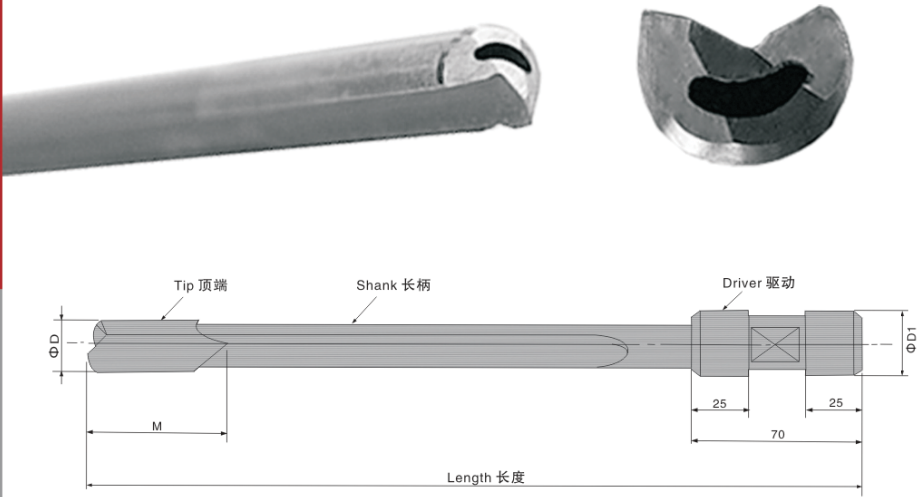


## VARIABLE FOR DIFFERENT MATERIALS



# STANDARD GUN DRILL

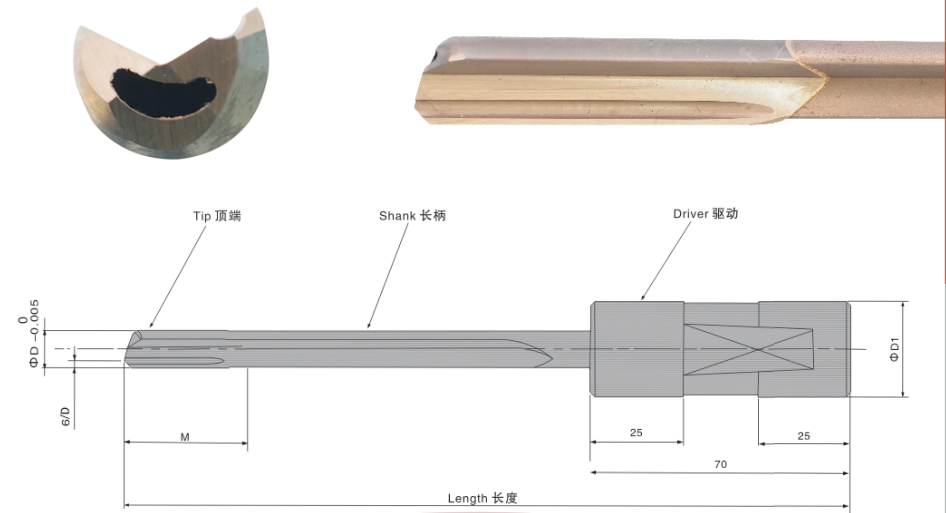
标准单刃枪钻



DRILL 外径(ΦD) outer diameter	刀刃长度(ℓ) blade length	全长(L) Overall Length	DRILL 外径 outer diameter	刀柄外径(ΦD)/ 内径(Φd) driver outer/ inner diameter
- 3.0 以下	15	依客户需求订制 Upon request	6.0 以下	依客户需求订制 Upon request
3.1~5.0 以下	20		6.1~12 以下	
5.1~7.0 以下	25		12.1~20 以下	
7.1~10.0 以下	30		20.1~25 以下	
10.1~13.5 以下	35		25.1 以下	
13.6~16.5 以下	40			
16.6~21 以下	45			
21.1~25 以下	50			
25.1~30 以下	55			
30.1 以上	60			

# CHIP BREAKER GUN DRILL

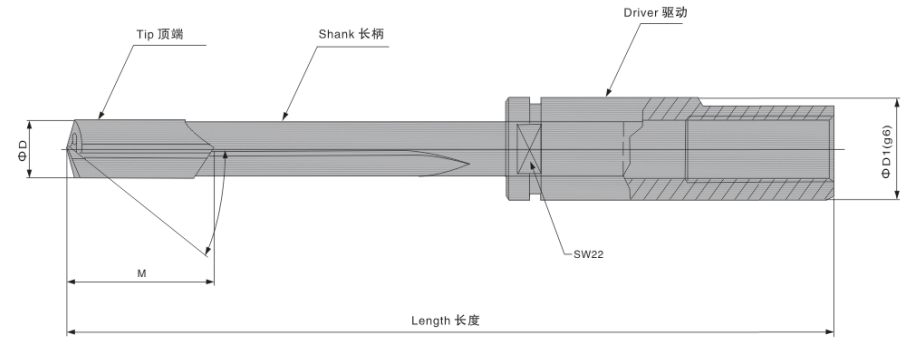
排屑强化刃枪钻



DRILL 外径(ΦD) outer diameter	刀刃长度(ℓ) blade length	全长(L) Overall Length	DRILL 外径(ΦD) outer diameter	刀柄外径(ΦD)/ 内径(Φd) driver outer/ inner diameter
6.0~7.0 以下	25	依客户需求订制 Upon request	6.0~12 以下	依客户需求订制 Upon request
7.1~10.0 以下	30		12.1~20 以下	
10.1~13.5 以下	35		20.1~25 以下	
13.6~16.5 以下	40		25.1 以下	
16.6~21 以下	45			
21.1~25 以下	50			
25.1~30 以下	55			
30.1 以上	60			

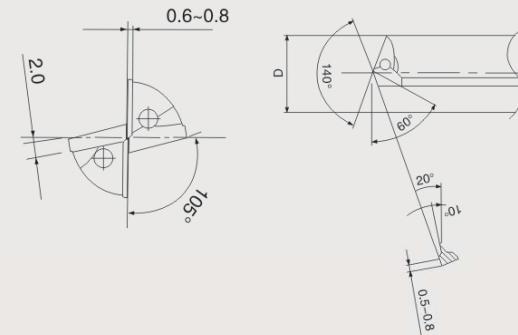
# TWIN FLUTE GUN DRILL

双刃枪钻

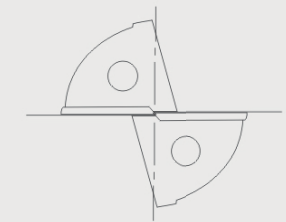


DRILL 外径(ØD) outer diameter	刀刃长度(l) blade length	全长(L) Overall Length	DRILL 外径 outer diameter	刀柄外径(ØD)/ 内径(Ød) driver outer/ inner diameter
6.0~7.5	35	依客户需求订制 Upon request	6.0以上 12.0 以下	依客户需求订制 Upon request
7.6~9.5	45		12.0~20.0 以下	
9.6~12	50			
12.1~18	55		20.0~25.0 以下	
18.1~22	60			
22.1~25	65			
25.1	70		25.0~3.0 以下	

## ■ Cutting Geometry



## ■ Bearing & Guide Pad



被削材 work material	加工面表面粗度 machined surface roughness	扩大量 Cutting Hole Variation
普通铸铁 cast iron	6s      15s	-5 μ   0      30 μ
可锻造铸铁 ductile cast iron	5s      12s	-5 μ   0      20 μ
合金 alloy	3s      10s	-10 μ   0      10 μ

被削材名 work material	切削条件 cutting condition									
	Ø6 ~ Ø8		Ø8 ~ Ø13		Ø13 ~ Ø19		Ø19 ~ Ø25		Ø25~	
	切削速度 (m/min)	移送速度 (mm/rev)	切削速度 (m/min)	移送速度 (mm/rev)	切削速度 (m/min)	移送速度 (mm/rev)	切削速度 (m/min)	移送速度 (mm/rev)	切削速度 (m/min)	移送速度 (mm/rev)
普通铸铁 cast iron	55~75	0.050 ~0.100	60~80	0.060 ~0.120	70~90	0.080 ~0.160	70~90	0.120 ~0.180	80~100	0.150 ~0.250
可锻造铸铁 ductile cast iron	45~60	0.040 ~0.060	55~70	0.060 ~0.080		0.060 ~0.100	60~80	0.080 ~0.180	65~85	0.100 ~0.180
合金 alloy	100~150	0.050 ~0.100	120~160	0.080 ~0.160	150~180	0.080 ~0.160	150~180	0.120 ~0.200	150~180	0.150 ~0.250

# DRIVERS FOR GUN DRILL MACHINES

Drawing	Ø D X L	Drawing	Ø D X L	
	6 x 30		4 x 28	
	10 x 40		5 x 28	
	16 x 45		6 x 36	
	19.05 x 69.8		8 x 36	
	25 x 70		10 x 40	
	25.4 x 69.8		12 x 45	
	31.75 x 69.8		14 x 45	
	38.1 x 69.8		16 x 48	
	16 x 50		18 x 48	
	10 x 50 M6 x 0.5		20 x 50	
	10 x 60 M6 x 0.5		25 x 56	
	12.7 x 50 M6 x 0.5		32 x 60	
	16 x 80 M10 x 1		40 x 70	
	25 x 100 M16 x 1.5		50 x 80	
	36 x 120 M24 x 1.5		63 x 90	
			10 x 68 M6 x 0.5	6 x 36
16 x 90 M10 x 1		8 x 36		
25 x 112 M16 x 1.5		10 x 40		
36 x 135 M24 x 1.5		12 x 45		
		25 x 70	16 x 48	
		32 x 70	18 x 48	
			12.7 x 38.1	20 x 50
			16 x 70	25 x 56
	19.05 x 69.8		32 x 60	
	20 x 70		40 x 70	
	12.7 x 38.1		50 x 80	
	19.05 x 69.8		63 x 90	
25.4 x 69.8	6 x 36			
25.4 x 100	8 x 36			
	31.75 x 69.8	10 x 40		
	31.75 x 100	12 x 45		
	38.1 x 69.8	16 x 48		
	38.1 x 100	18 x 48		
		16 x 112 Tr 16 x 1.5	20 x 50	
		20 x 126 Tr 20 x 2	25 x 56	
		28 x 126 Tr 28 x 2	32 x 60	
		36 x 162 Tr 36 x 2	40 x 70	
		16 x 40	6 x 36	
		25 x 50	8 x 36	
		35 x 60	10 x 40	
			A type	12 x 45
	16 x 48			
	18 x 48			
	20 x 50			
				B type
70				
70				
70				
70				
70				
70				
70				

# PRODUCT SERIES & WORKSHOP

