



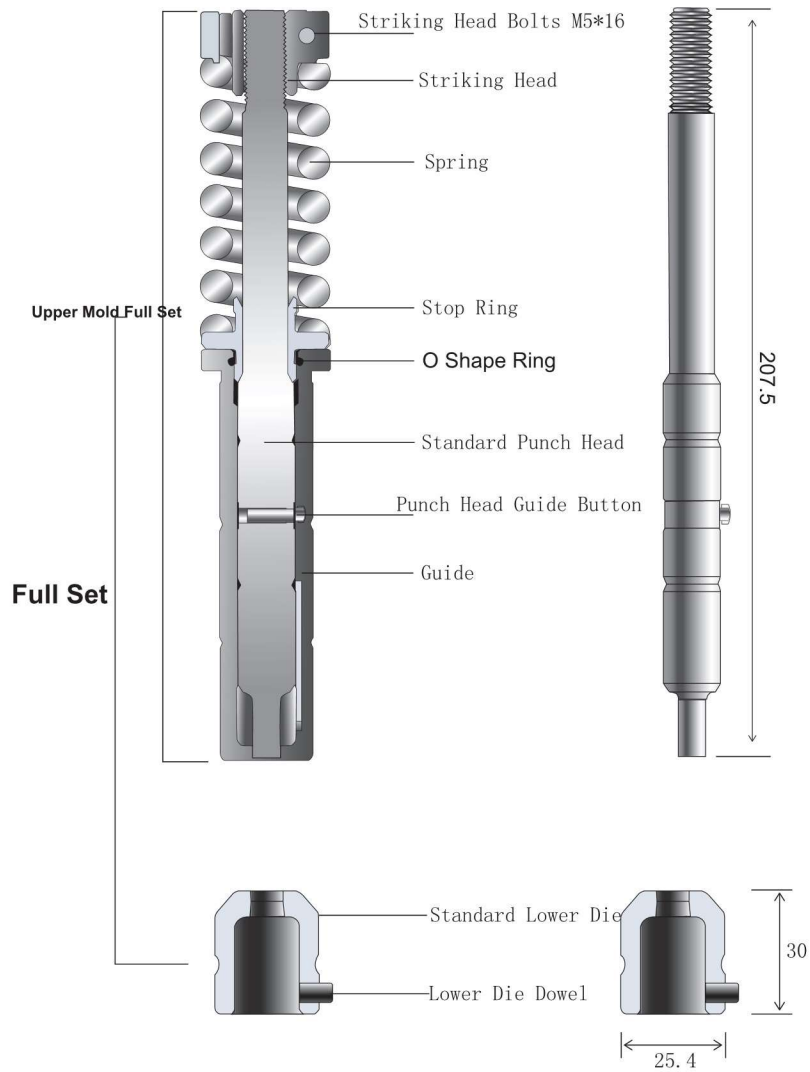
# CNC TURRET TOOLING SYSTEM



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## A Station (Within 12.7mm Diameter)



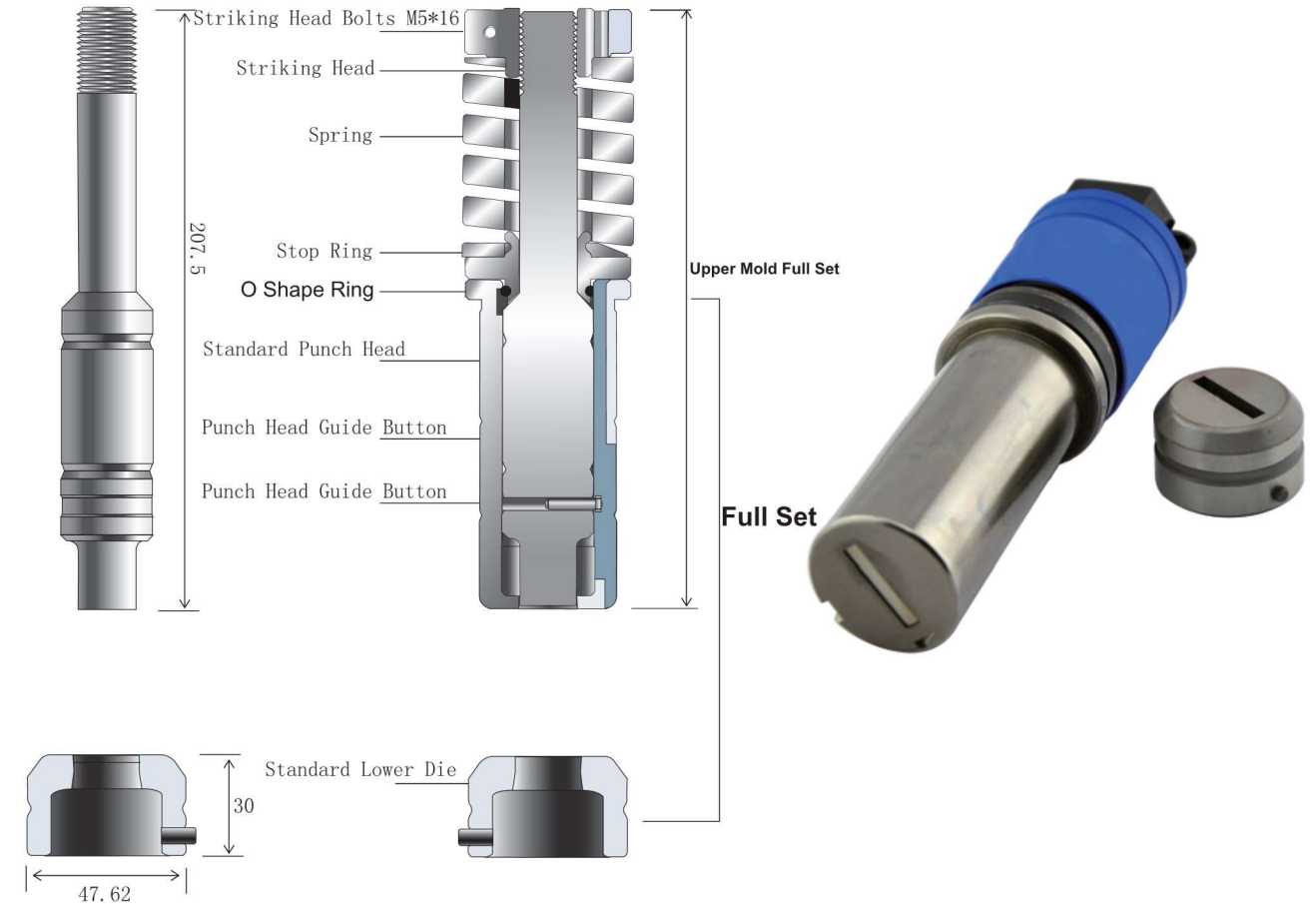
Part Name	Code	Shape	Short Code	Example
Full Set	ZAY-1010	Round	RO	
Upper Die Full Set	ZAY-2010	Square	SQ	
Punch Head	ZAY-1001	Rectangle	RE	
Guide	ZAY-1002	Oval Shape	OB	
Standard Lower Die	ZAY-1003	Double-D	WD	
Stop Ring	ZAY-10060	Single-D	SD	
Striking Head	ZAY-10061	Socket	SP	
Spring	ZAY-10062	Hex	ST	

### Instructions

- ※ Standard punch head grinding length 4-5mm
- ※ After grinding the punch head, adjust the striking head to the original height.
- ※ Guide standard keyway is 0° , 90° .
- ※ Square guide generally is 0° , 135° .
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

## B Station (Within 31.7mm Diameter)



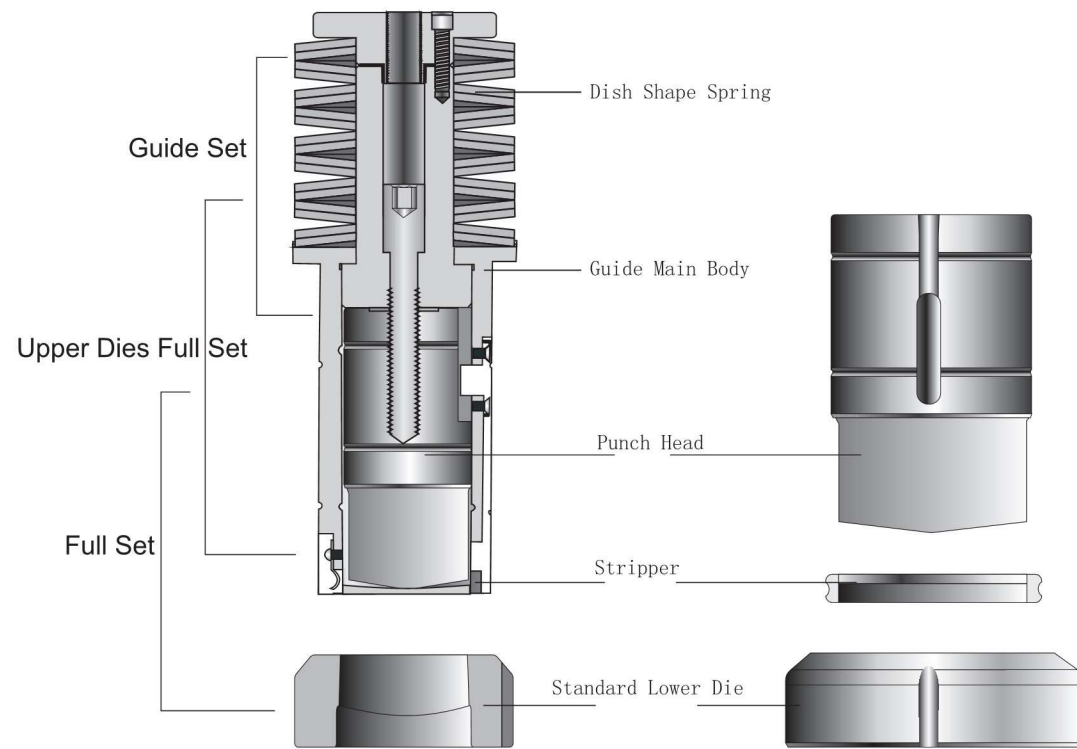
Part Name	Code	Shape	Short Code	Example
Full Set	ZAY-1010	Round	RO	
Upper Die Full Set	ZAY-2010	Square	SQ	
Punch Head	ZAY-1001	Rectangle	RE	
Guide	ZAY-1002	Oval Shape	OB	
Standard Lower Die	ZAY-1003	Double-D	WD	
Stop Ring	ZAY-10060	Single-D	SD	
Striking Head	ZAY-10061	Socket	SP	
Spring	ZAY-10062	Hex	ST	

### Instructions

- ※ Standard punch head grinding length 4-5mm
- ※ After grinding the punch head, adjust the striking head to the original height.
- ※ Guide standard keyway is 0° , 90° .
- ※ Square guide generally is 0° , 135° .
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

## C Station (Within 50.8mm Diameter)

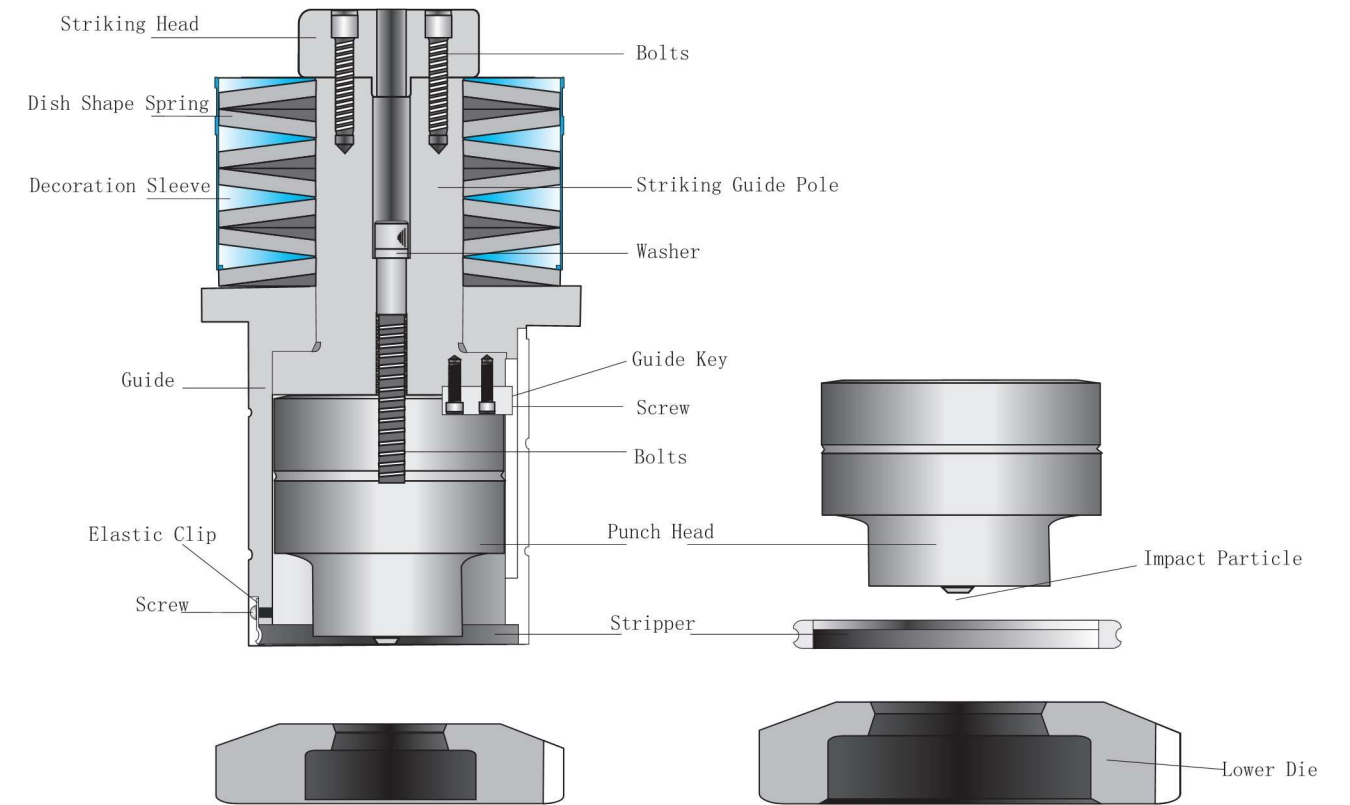


- Instructions**
- ※ Standard punch head grinding length 4-5mm
  - ※ After grinding the punch head, adjust the striking head to the original height.
  - ※ Guide standard keyway is 0°, 90°.
  - ※ Square guide generally is 0°, 135°.
  - ※ The upper dies group includes: guide, punch head, striking head & spring group.
- Max Thickness:**  
Medium carbon steel plate 4-5mm

Part Name	Code	Mold Shape	Short Code	Example
Full Set	ZCY-3020	Round	RO	
Upper Dies Full Set	ZCY-3011	Square	SQ	
Punch Head	ZCY-3001	Rectangle	RE	
Stripper	ZCY-3002	Oval Shape	OB	
Standard Lower Die	ZCY-3003	Double D	WD	
Guide Group	ZCY-30060	Single D	SD	
Guide Main Body	ZCY-30061	Socket Shape	SP	
Dish Shape Spring	ZCY-30062	Hex	ST	



## D Station (Within 88.9mm Diameter)

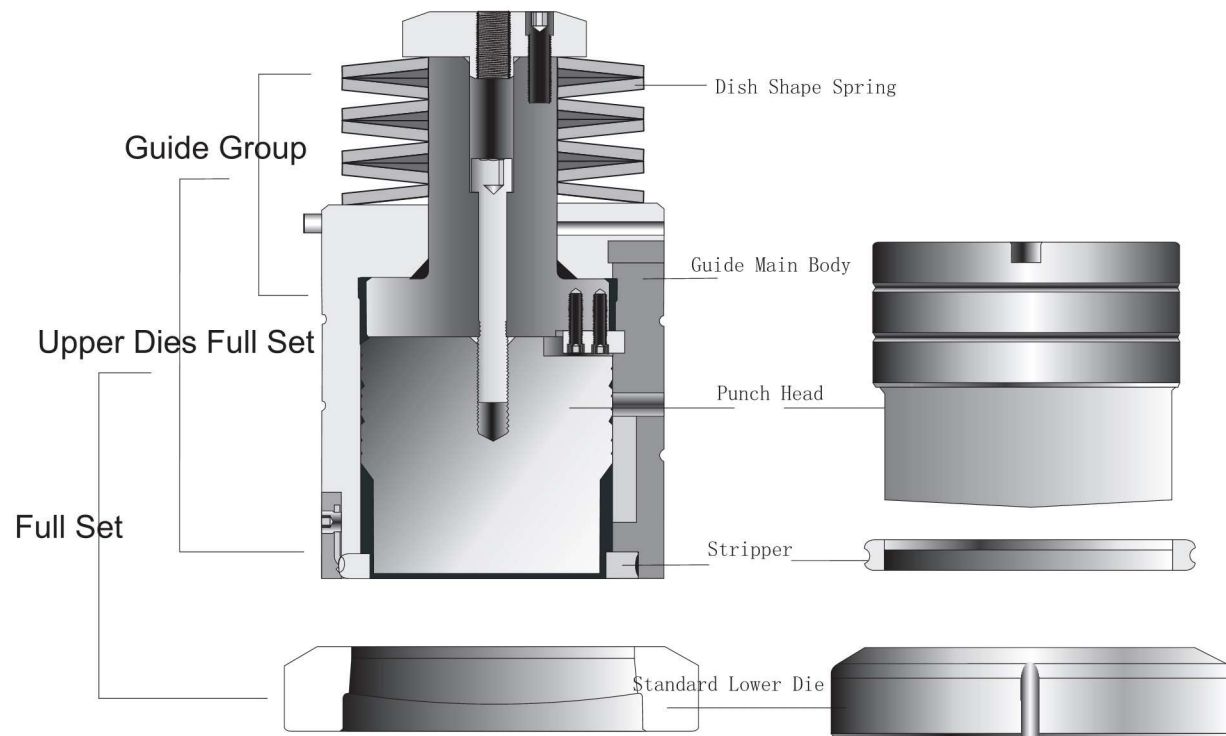


- Instructions**
- ※ Standard punch head grinding length 4-5mm
  - ※ After grinding the punch head, adjust the striking head to the original height.
  - ※ Guide standard keyway is 0°, 90°.
  - ※ Square guide generally is 0°, 135°.
  - ※ The upper dies group includes: guide, punch head, striking head & spring group.
- Max Thickness:**  
Medium carbon steel plate 4-5mm

Part	Code	Mold Shape	Short Code	Example
Full Set	ZCY-3020	Round	RO	
Upper Dies Full Set	ZCY-3011	Square	SQ	
Punch Head	ZCY-3001	Rectangle	RE	
Stripper	ZCY-3002	Oval Shape	OB	
Standard Lower Die	ZCY-3003	Double D	WD	
Guide Group	ZCY-30060	Single D	SD	
Guide Main Body	ZCY-30061	Socket Shape	SP	
Dish Shape Spring	ZCY-30062	Hex	ST	



## E Station (Within 114.3mm Diameter)

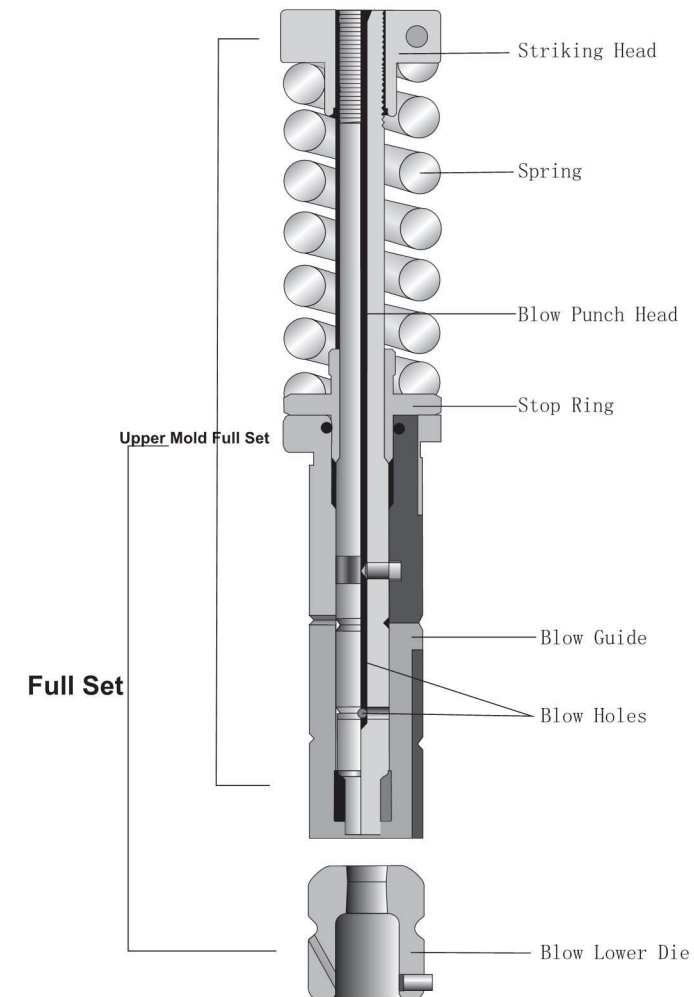


- Instructions**
- ※ Standard punch head grinding length 4-5mm
  - ※ After grinding the punch head, adjust the striking head to the original height.
  - ※ Guide standard keyway is 0° , 90° .
  - ※ The full set includes upper dies group and lower die.
  - ※ The upper dies group includes: guide, punch head, stripper.
- Max Thickness:**  
Medium carbon steel plate 4-5mm

Part	Code	Mold Shape	Short Code	Example
Full Set	ZEY-5020	Round	RO	
Upper Dies Full Set	ZEY-5011	Square	SQ	
Punch Head	ZEY-5001	Rectangle	RE	
Stripper	ZEY-5002	Oval Shape	OB	
Standard Lower Die	ZEY-5003	Double D	WD	
Guide Group	ZEY-50060	Single D	SD	
Guide Main Body	ZEY-50061	Socket Shape	SP	
Dish Shape Spring	ZEY-50062	Hex	ST	



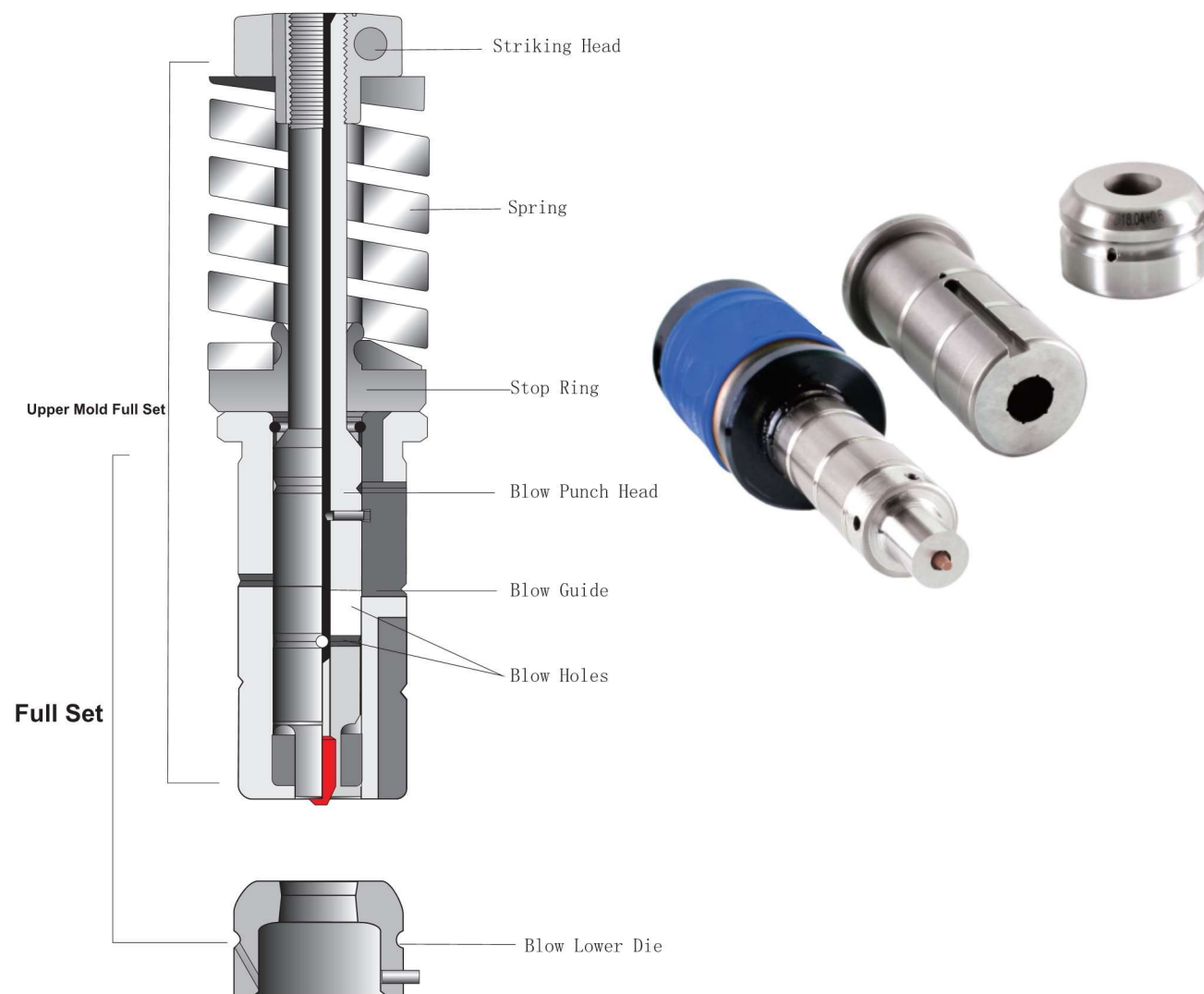
## A Station (Within 12.7mm Diameter)



Part Name	Code	Shape	Short Code	Example
Full Set	ZAQ-1010	Round	RO	
Upper Die Full Set	ZAQ-1011	Square	SQ	
Blow Punch Head	ZAQ-1001	Rectangle	RE	
Blow Guide	ZAQ-1002	Oval Shape	OB	
Blow Lower Die	ZAQ-1003	Double-D	WD	
Stop Ring	ZAQ-10060	Single-D	SD	
Striking Head	ZAQ-10061	Socket	SP	
Spring	ZAQ-10062	Hex	ST	

- Instructions**
- ※ It has the function of lubricating and cooling punch, and can restrain the sticking phenomenon of knife edge.
  - ※ Prevent waste material from jumping and strip.
  - ※ Extend the service life of punch, with heat dissipation function.
  - ※ The whole set of mould includes upper die combination and lower die.
  - ※ The upper dies group includes: guide, punch head, striking head & spring group.
- Max Thickness:**  
Medium carbon steel plate 4-5mm

## B Station (Within 31.7mm Diameter)



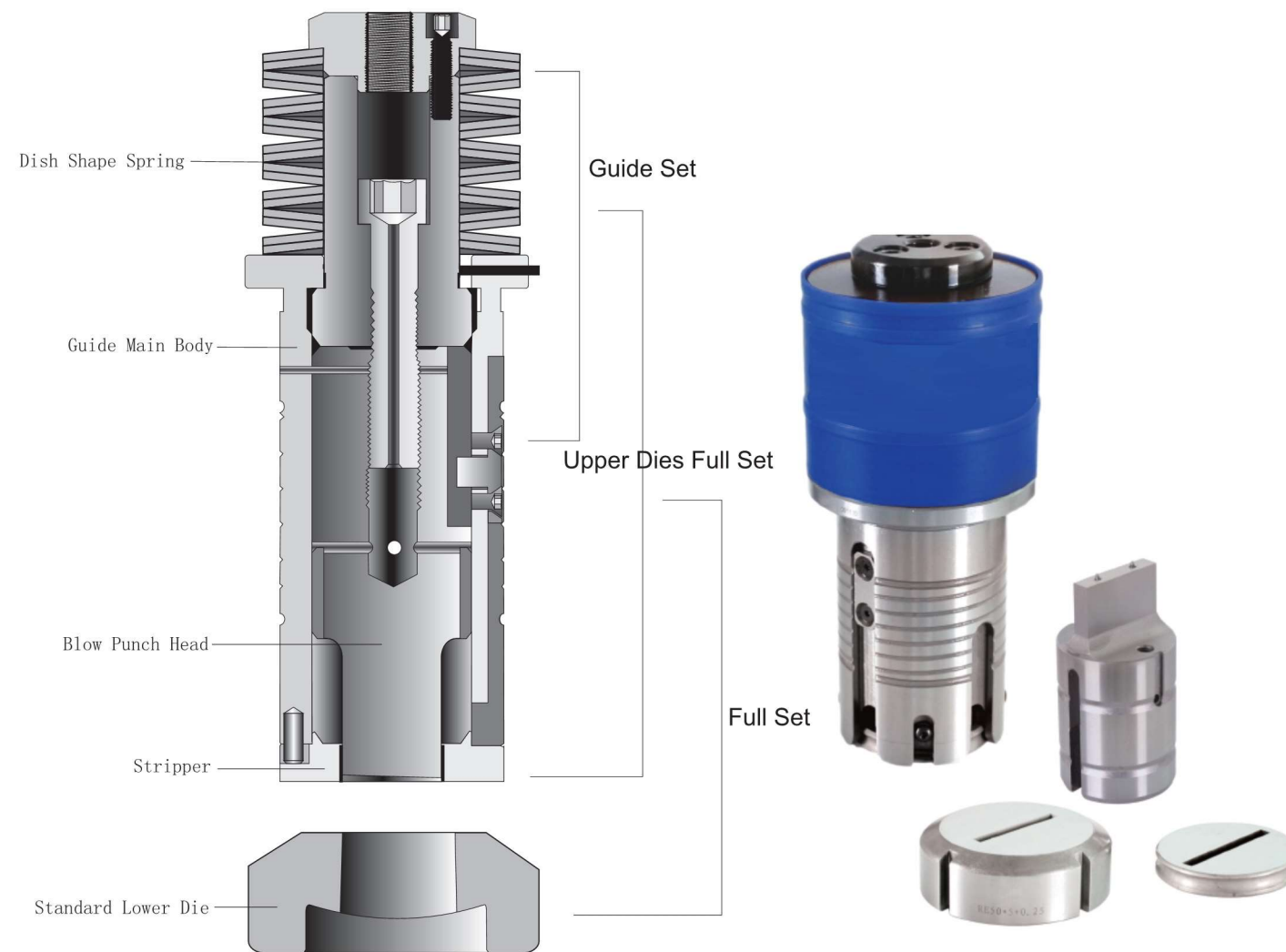
Part Name	Code	Shape	Short Code	Example
Full Set	ZBQ-1010	Round	RO	
Upper Die Full Set	ZBQ-1011	Square	SQ	
Blow Punch Head	ZBQ-1001	Rectangle	RE	
Guide	ZBQ-1002	Obround	OB	
Blow Lower Die	ZBQ-1003	Double D	WD	
Stop Ring	ZBQ-10060	Single D	SD	
Striking Head	ZBQ-10061	Socket Shape	SP	
Spring	ZBQ-10062	Hex	ST	

### Instructions

- ※ It has the function of lubricating and cooling punch, and can restrain the sticking phenomenon of knife edge.
- ※ Prevent waste material from jumping and strip.
- ※ Extend the service life of punch, with heat dissipation function.
- ※ The whole set of mould includes upper die combination and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

## C Station (Within 50.8mm Diameter)



Part Name	Code	Shape	Short Code	Example
Full Set	ZCQ-3010	Round	RO	
Upper Die Full Set	ZCQ-3011	Square	SQ	
Blow Punch Head	ZCQ-3001	Rectangle	RE	
Stripper	ZCQ-3002	Obround	OB	
Blow Lower Die	ZCQ-3003	Double D	WD	
Guide Set	ZCQ-30060	Single D	SD	
Guide Main	ZCQ-30061	Socket Shape	SP	
Dish Shape Spring	ZCQ-30062	Hex	ST	

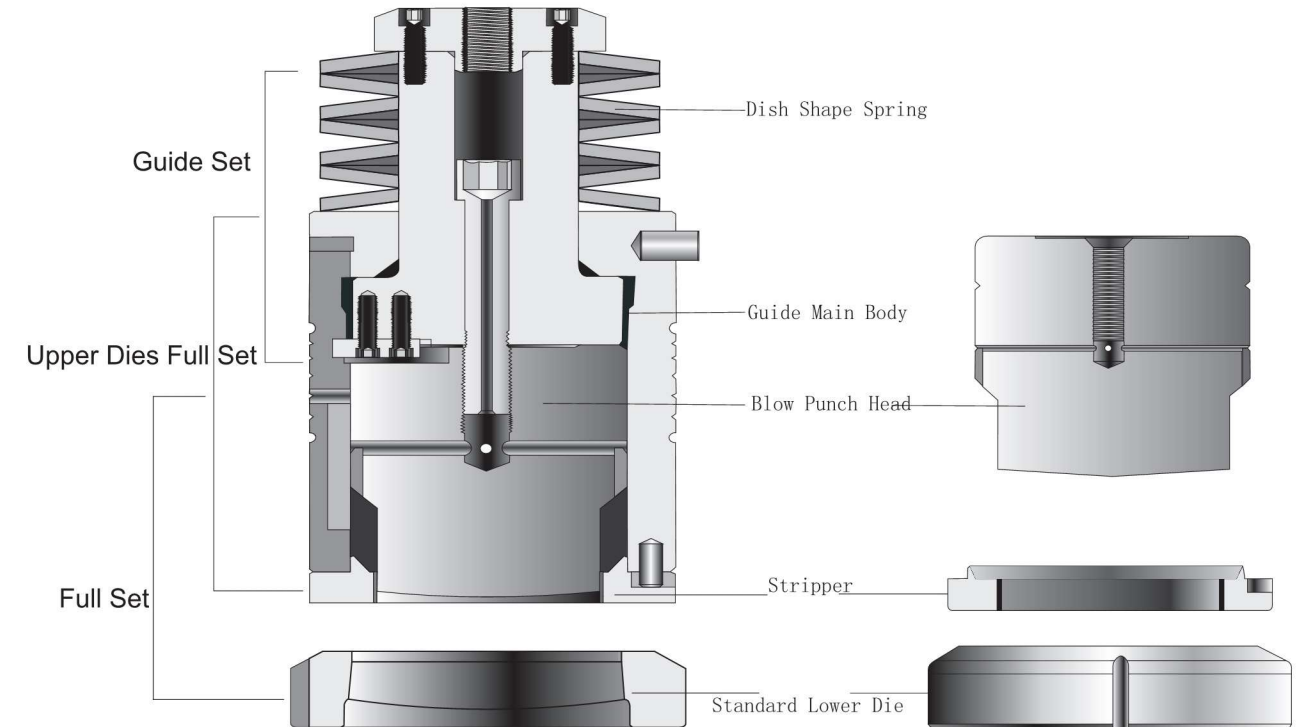
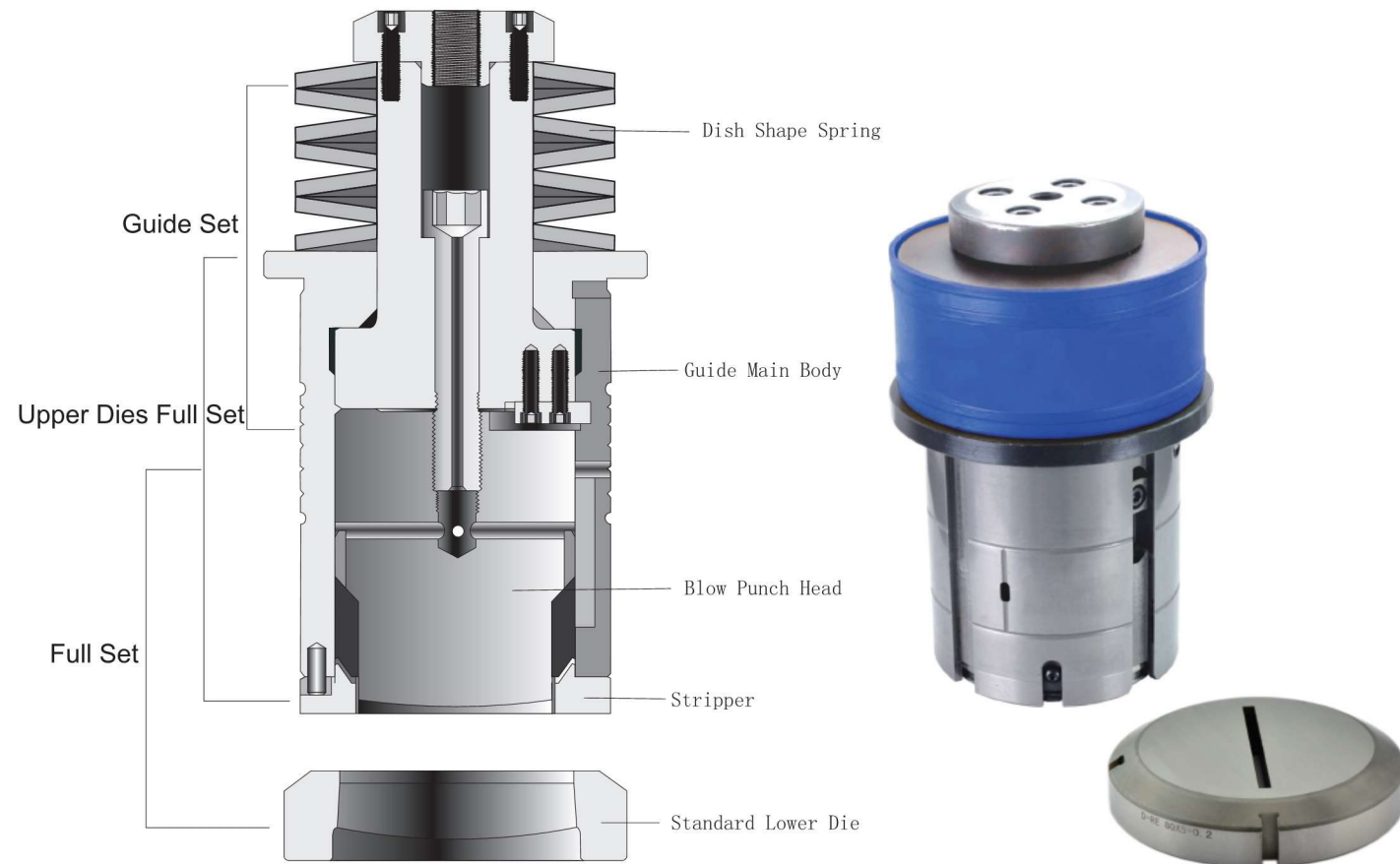
### Instructions

- ※ It has the function of lubricating and cooling punch, and can restrain the sticking phenomenon of knife edge.
- ※ Prevent waste material from jumping and strip.
- ※ Extend the service life of punch, with heat dissipation function.
- ※ The whole set of mould includes upper die combination and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

## D Station (Within 88.9mm Diameter)

## E Station (Within 114.3mm Diameter)



**Instructions**

- ※ It has the function of lubricating and cooling punch, and can restrain the sticking phenomenon of knife edge.
- ※ Prevent waste material from jumping and strip.
- ※ Extend the service life of punch, with heat dissipation function.
- ※ The whole set of mould includes upper die combination and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZDQ-4010	Round	RO	
Upper Die Full Set	ZDQ-4011	Square	SQ	
Blow Punch Head	ZDQ-4001	Rectangle	RE	
Stripper	ZDQ-4002	Obround	OB	
Blow Lower Die	ZDQ-4003	Double D	WD	
Guide Set	ZDQ-40060	Single D	SD	
Guide Main	ZDQ-40061	Socket Shape	SP	
Dish Shape Spring	ZDQ-40062	Hex	ST	

**Instructions**

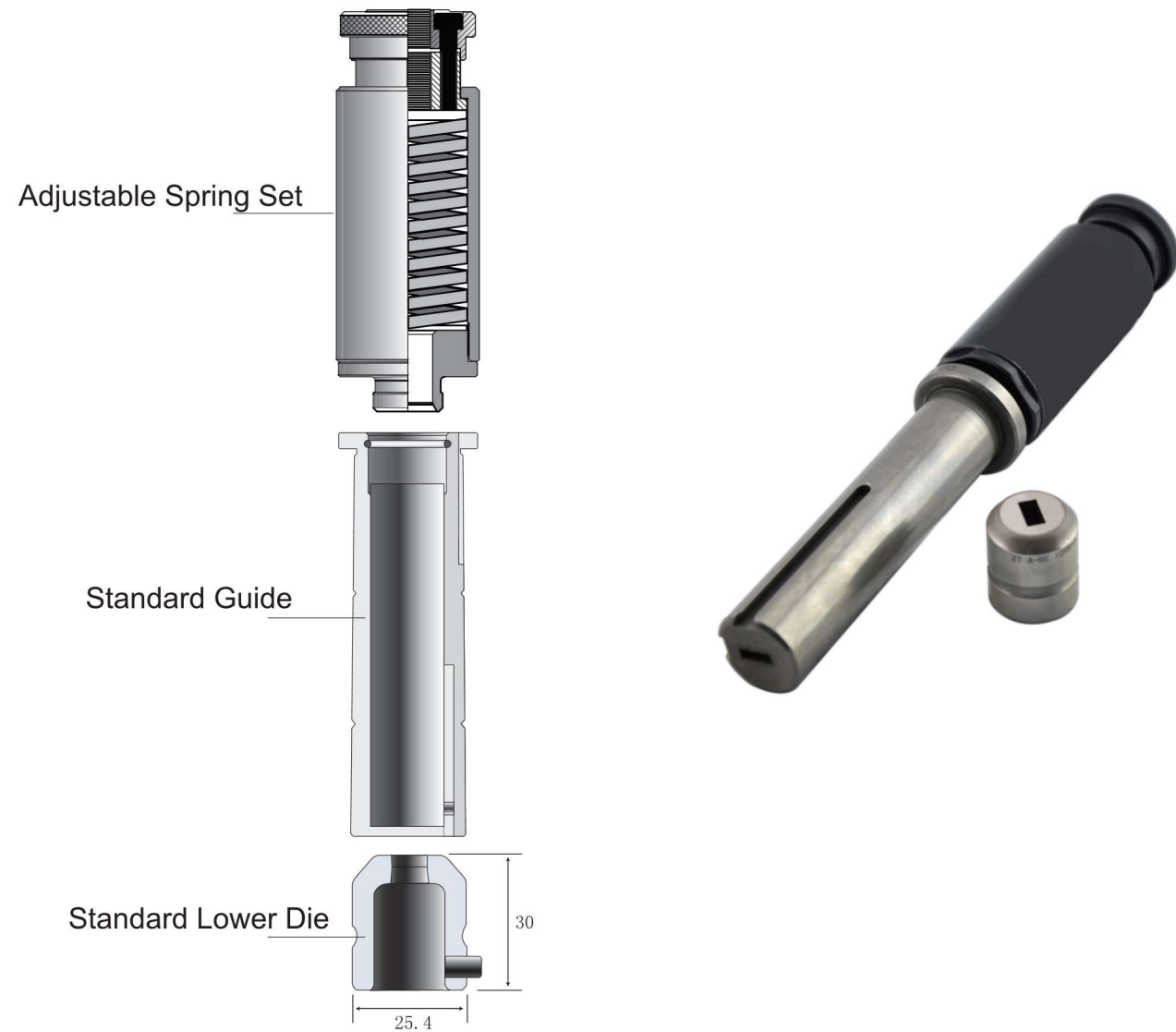
- ※ It has the function of lubricating and cooling punch, and can restrain the sticking phenomenon of knife edge.
- ※ Prevent waste material from jumping and strip.
- ※ Extend the service life of punch, with heat dissipation function.
- ※ The whole set of mould includes upper die combination and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZEQ-5010	Round	RO	
Upper Die Full Set	ZEQ-5011	Square	SQ	
Blow Punch Head	ZEQ-5001	Rectangle	RE	
Stripper	ZEQ-5002	Obround	OB	
Blow Lower Die	ZEQ-5003	Double D	WD	
Guide Set	ZEQ-50060	Single D	SD	
Guide Main	ZEQ-50061	Socket Shape	SP	
Dish Shape Spring	ZDQ-50062	Hex	ST	



A Station (Within 12.7mm Diameter)



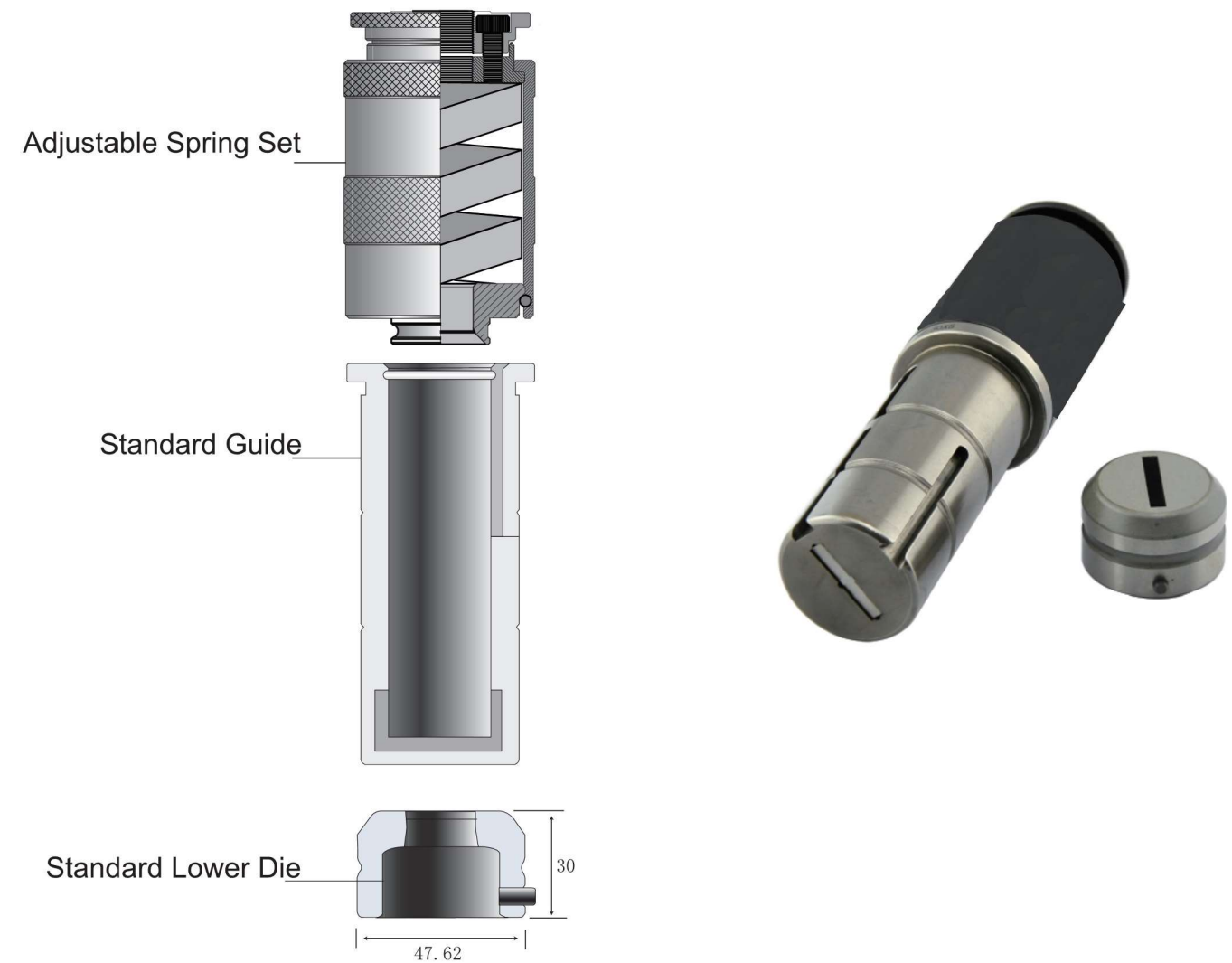
Part Name	Code	Shape	Short Code	Example
Full Set	ZAK-1010	Round	RO	
Upper Die Full Set	ZAK-1011	Square	SQ	
Punch Head	ZAK-1001	Rectangle	RE	
Guide	ZAK-1002	Oval Shape	OB	
Standard Lower Die	ZAK-1003	Double-D	WD	
Stop Ring	ZAK-10060	Single-D	SD	
Striking Head	ZAK-10061	Socket	SP	
Spring	ZAK-10062	Hex	ST	

Instructions

- ※ Standard structure dies and international mainstream brands exchange and match
- ※ The standard keyway of guide sleeve is 0°, 90° by default
- ※ After grinding, the punch should be adjusted to the original height
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

B Station (Within 31.7mm Diameter)



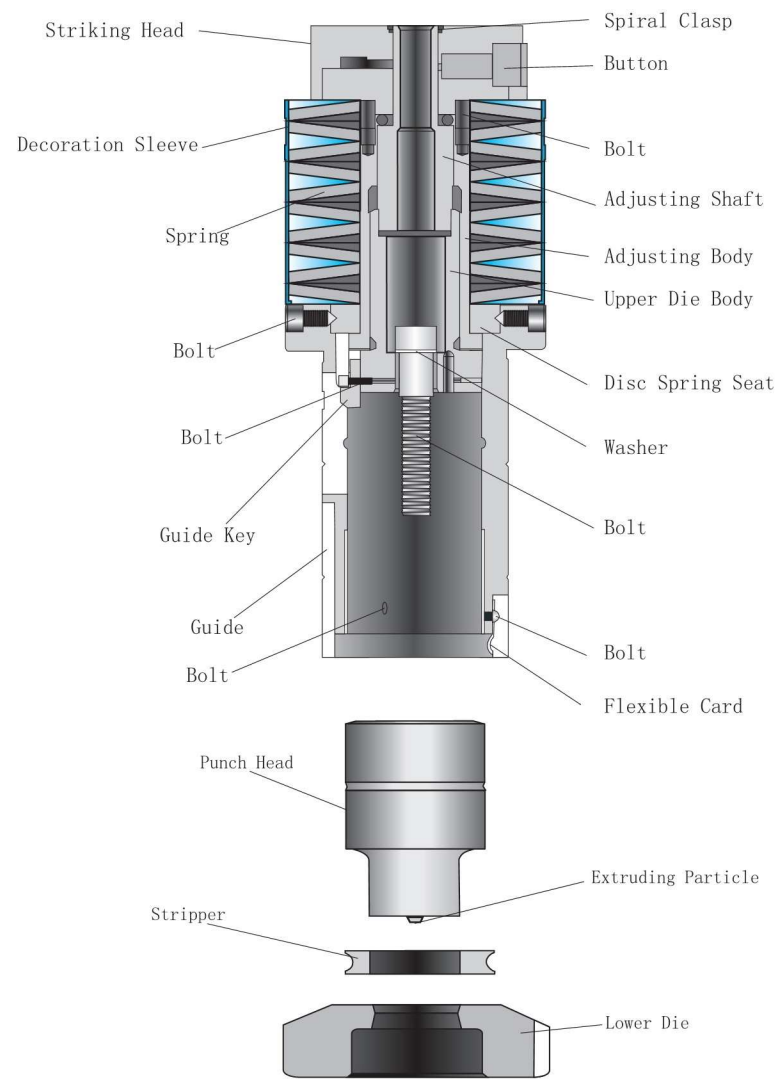
Part Name	Code	Shape	Short Code	Example
Full Set	ZBK-1010	Round	RO	
Upper Die Full Set	ZBK-1011	Square	SQ	
Punch Head	ZBK-1001	Rectangle	RE	
Guide	ZBK-1002	Oval Shape	OB	
Standard Lower Die	ZBK-1003	Double-D	WD	
Stop Ring	ZBK-10060	Single-D	SD	
Striking Head	ZBK-10061	Socket	SP	
Spring	ZBK-10062	Hex	ST	

Instructions

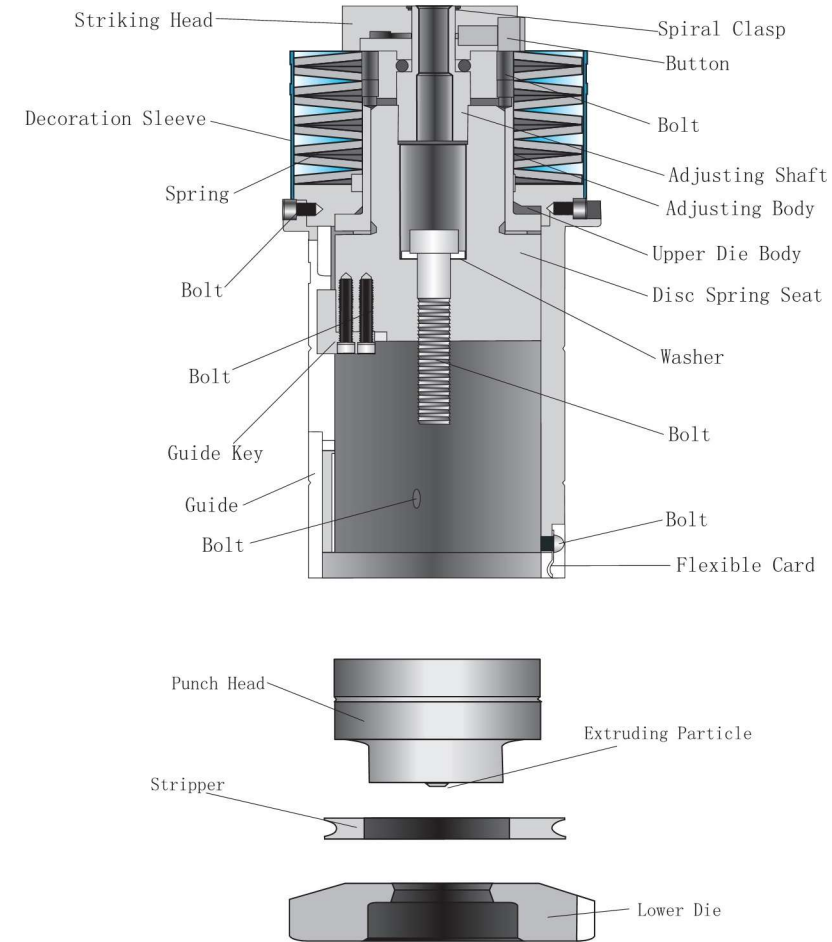
- ※ Standard structure dies and international mainstream brands exchange and match
- ※ The standard keyway of guide sleeve is 0°, 90° by default
- ※ After grinding, the punch should be adjusted to the original height
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

C Station (Within 50.8mm Diameter)



D Station (Within 88.9mm Diameter)



Part Name	Code	Shape	Short Code	Example
Full Set	ZCK-1010	Round	RO	
Upper Die Full Set	ZCK-1011	Square	SQ	
Punch Head	ZCK-1001	Rectangle	RE	
Stripper	ZCK-1002	Oval Shape	OB	
Standard Lower Die	ZCK-1003	Double-D	WD	
Guide Set	ZCK-10060	Single-D	SD	
Guide Main	ZCK-10061	Socket	SP	
Disc Spring	ZCK-10062	Hex	ST	

Instructions

- ※ Standard punch edge grinding length: 5-8mm
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0°, 90°, with good adaptability
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

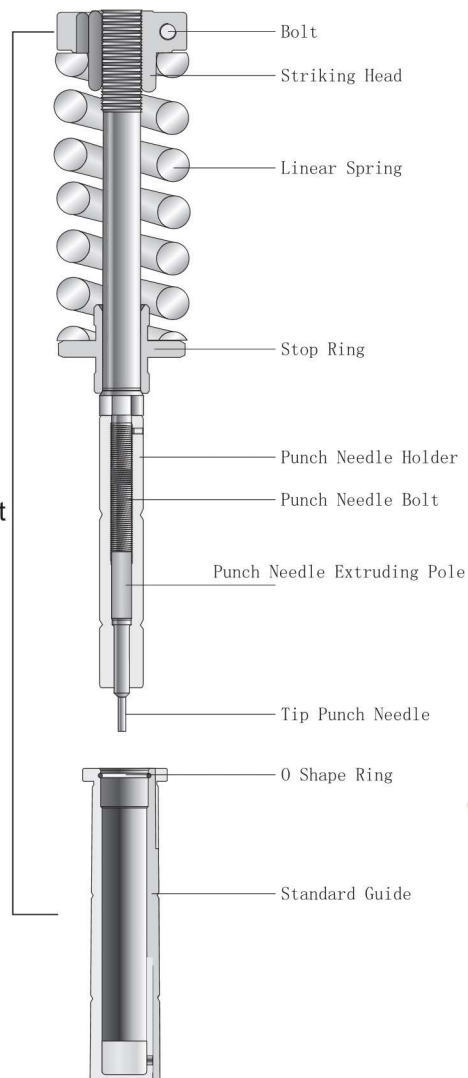
Part Name	Code	Shape	Short Code	Example
Full Set	ZDK-1010	Round	RO	
Upper Die Full Set	ZDK-1011	Square	SQ	
Punch Head	ZDK-1001	Rectangle	RE	
Stripper	ZDK-1002	Oval Shape	OB	
Standard Lower Die	ZDK-1003	Double-D	WD	
Guide Set	ZDK-10060	Single-D	SD	
Guide Main	ZDK-10061	Socket	SP	
Disc Spring	ZDK-10062	Hex	ST	

Instructions

- ※ Standard punch edge grinding length: 5-8mm
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0°, 90°, with good adaptability
- ※ The full set includes upper dies group and lower die.
- ※ The upper dies group includes: guide, punch head, striking head & spring group.

**Max Thickness:**  
Medium carbon steel plate 4-5mm

## A Station (Within 6mm Diameter)



Round Upper Die Set

Part Name	Code	Part Name	Code
Full Set	ZAJ-1010	Striking Head	ZAJ-10063
Upper Die Full Set	ZAJ-1011	Spring	ZAJ-10064
Punch Head Seat	ZAJ-1001		
Punch Pin	ZAJ-1002		
Cutter bar	ZAJ-1003		
Guide	ZAJ-10060		
Standard Lower Die	ZAJ-10061		
Stop Ring	ZAJ-10062		

### Instructions

※ The punch needle can be replaced separately, only for round hole

※ Suitable aperture range is 1.0-6.0mm

※ When the aperture size is close to the following limit values, it shall be selected:

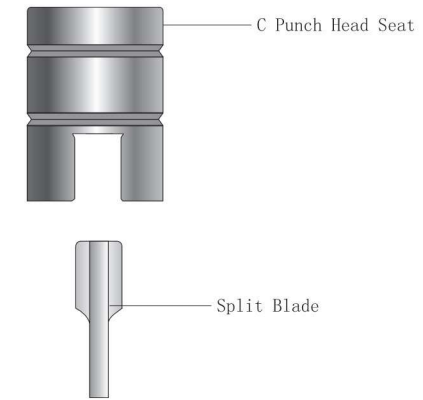
Aluminum Plate (T plate thickness) 0.75T

Carbon Steel Plate 1T

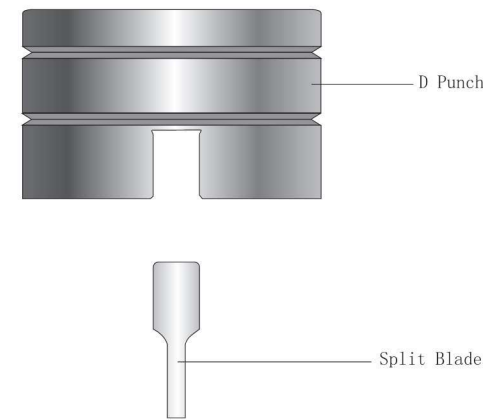
Stainless Steel Plate 2T

Maximum plate thickness:  
medium carbon steel plate 3.0mm

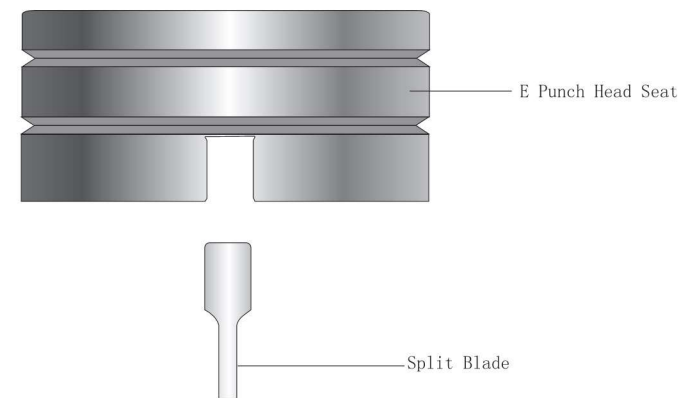
## C Station Split Punch Head



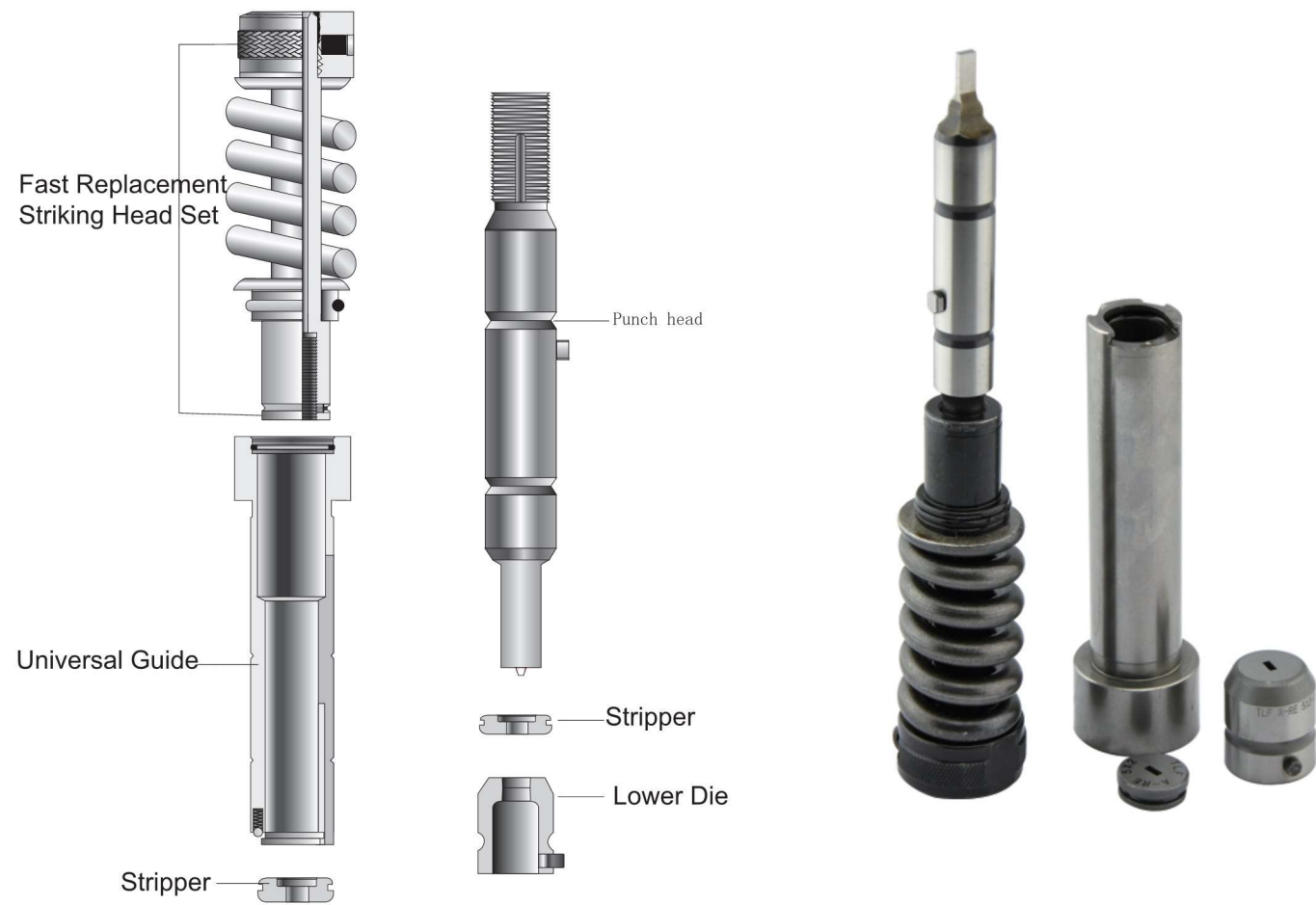
## D Station Split Punch Head



## E Station Split Punch Head



## A Station (Within 12.7mm Diameter)



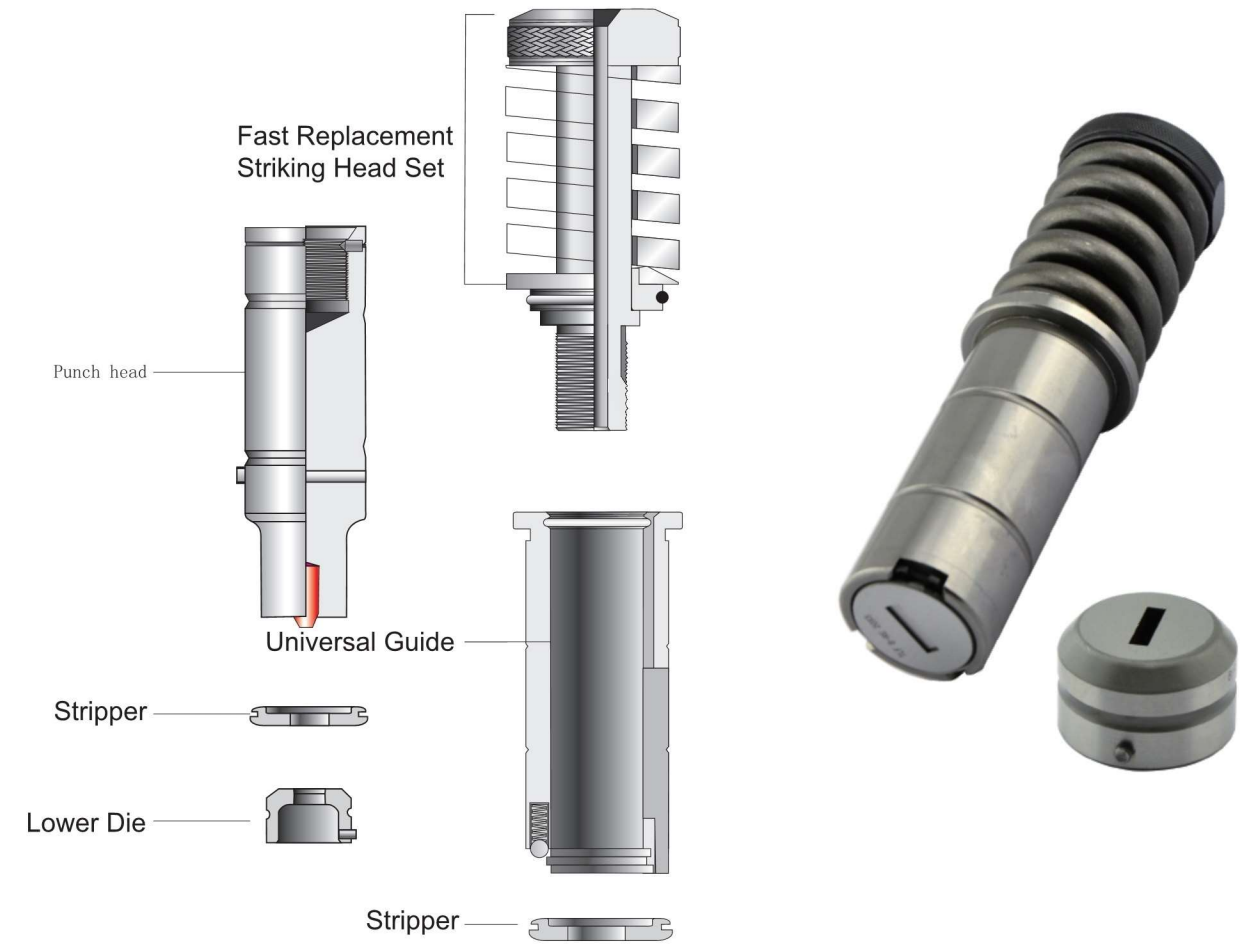
Part Name	Code	Shape	Short Code	Example
Full Set	ZWA-1010	Round	RO	
Upper Die Full Set	ZWA- 2010	Square	SQ	
Punch Head	ZWA-1001	Rectangle	RE	
Universal Guide	ZWA-1003	Oval Shape	OB	
Stripper	ZWA-1004	Double-D	WD	
Standard Lower Die	ZWA-1005	Single-D	SD	
Slug Free Die	ZWA-1006	Socket	SP	
Striking Head Set	ZWA-60062	Hex	ST	

### Instructions

- ※ Standard punch edge grinding length: 5-8mm, application cost lower 60%
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0°, 90°, 135°, with good adaptability
- ※ Guide is made of high-quality steel with long service life
- ※ The whole set of mould includes upper die set and lower mould
- ※ The upper die set includes: universal guide, punch head, stripper and striking head set

Maximum plate thickness:  
medium carbon steel plate 3-4mm

## B Station (Within 31.7mm Diameter)



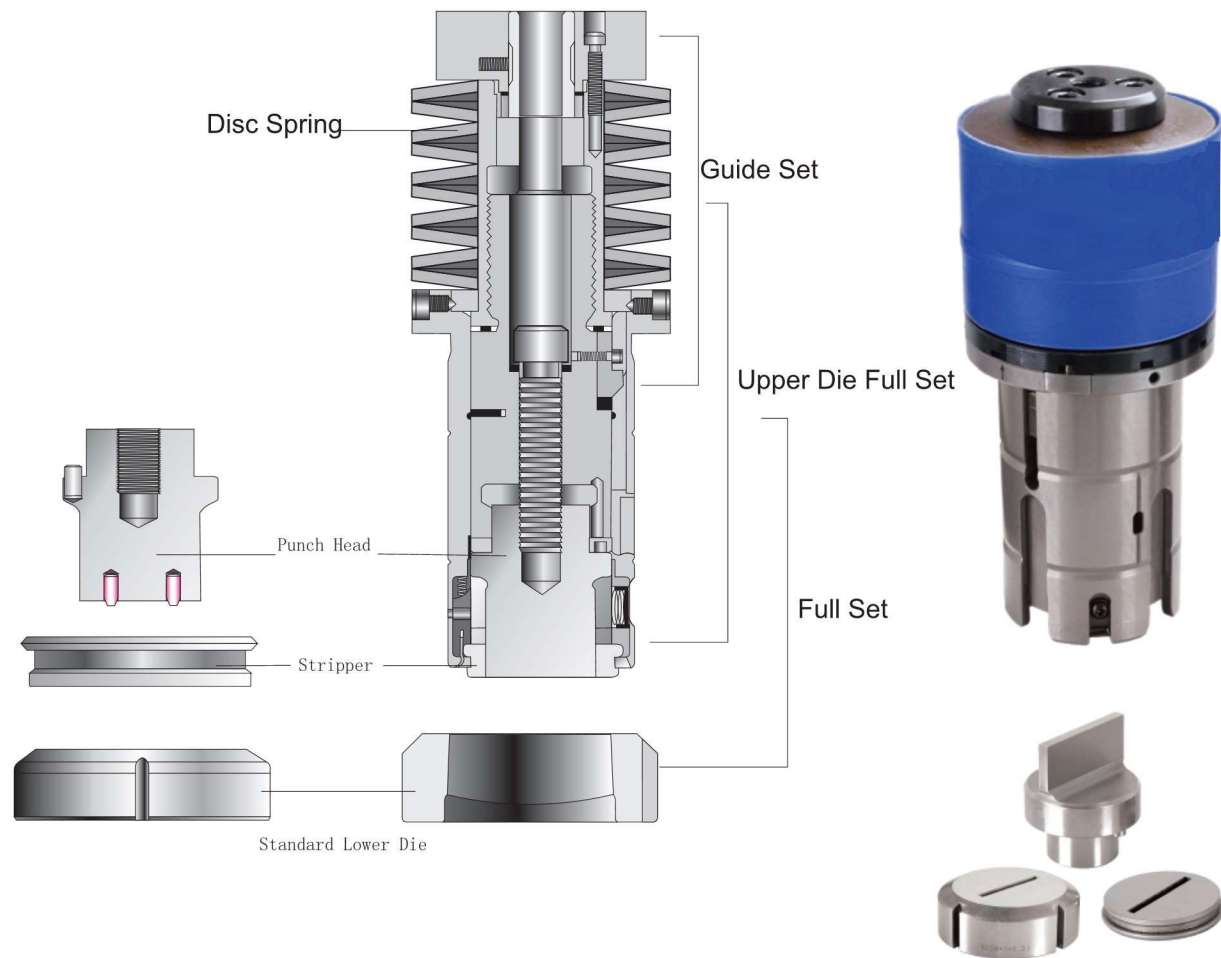
Part Name	Code	Shape	Short Code	Example
Full Set	ZWB-2010	Round	RO	
Upper Die Full Set	ZWB-2011	Square	SQ	
Punch Head	ZWB-2001	Rectangle	RE	
Universal Guide	ZWB-2003	Oval Shape	OB	
Stripper	ZWB-2004	Double-D	WD	
Standard Lower Die	ZWB-2005	Single-D	SD	
Slug Free Die	ZWB-2006	Socket	SP	
Striking Head Set	ZWB-60063	Hex	ST	

### Instructions

- ※ Standard punch edge grinding length: 5-8mm, application cost lower 60%
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0°, 90°, 135°, with good adaptability
- ※ Guide is made of high-quality steel with long service life
- ※ The whole set of mould includes upper die set and lower mould
- ※ The upper die set includes: universal guide, punch head, stripper and striking head set

Maximum plate thickness:  
medium carbon steel plate 3-4mm

## C Station (Within 50.8mm Diameter)



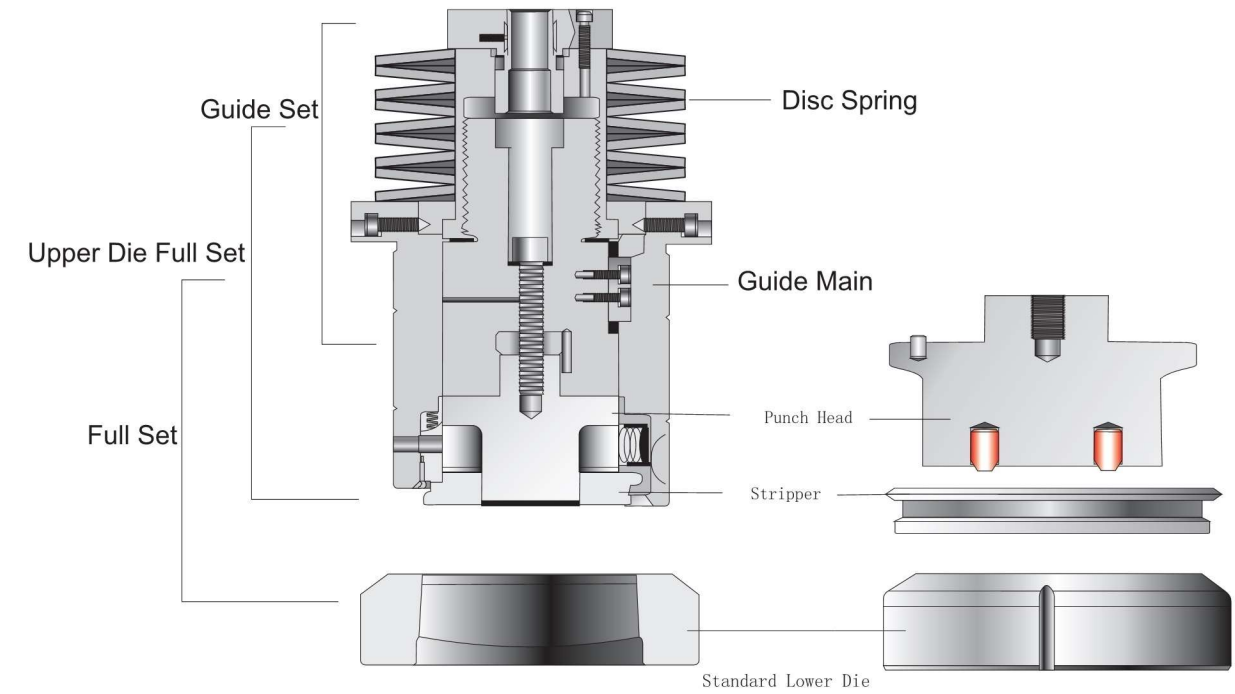
Part Name	Code	Shape	Short Code	Example
Full Set	ZWC-3020	Round	RO	
Upper Die Full Set	ZWC-3011	Square	SQ	
Punch Head	ZWC-3001	Rectangle	RE	
Stripper	ZWC-3002	Oval Shape	OB	
Standard Lower Die	ZWC-3003	Double-D	WD	
Guide Set	ZWC-3005	Single-D	SD	
Guide Main	ZWC-3006	Socket	SP	
Disc Spring	ZWC-60064	Hex	ST	

### Instructions

- ※ Standard punch edge grinding length: 5-8mm
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0°, 90°, with good adaptability
- ※ Guide is made of high-quality steel with long service life
- ※ The whole set of mould includes upper die set and lower mould
- ※ The upper die set includes: guide set, punch head, stripper

Maximum plate thickness:  
medium carbon steel plate 4mm

## D Station (Within 88.9mm Diameter)



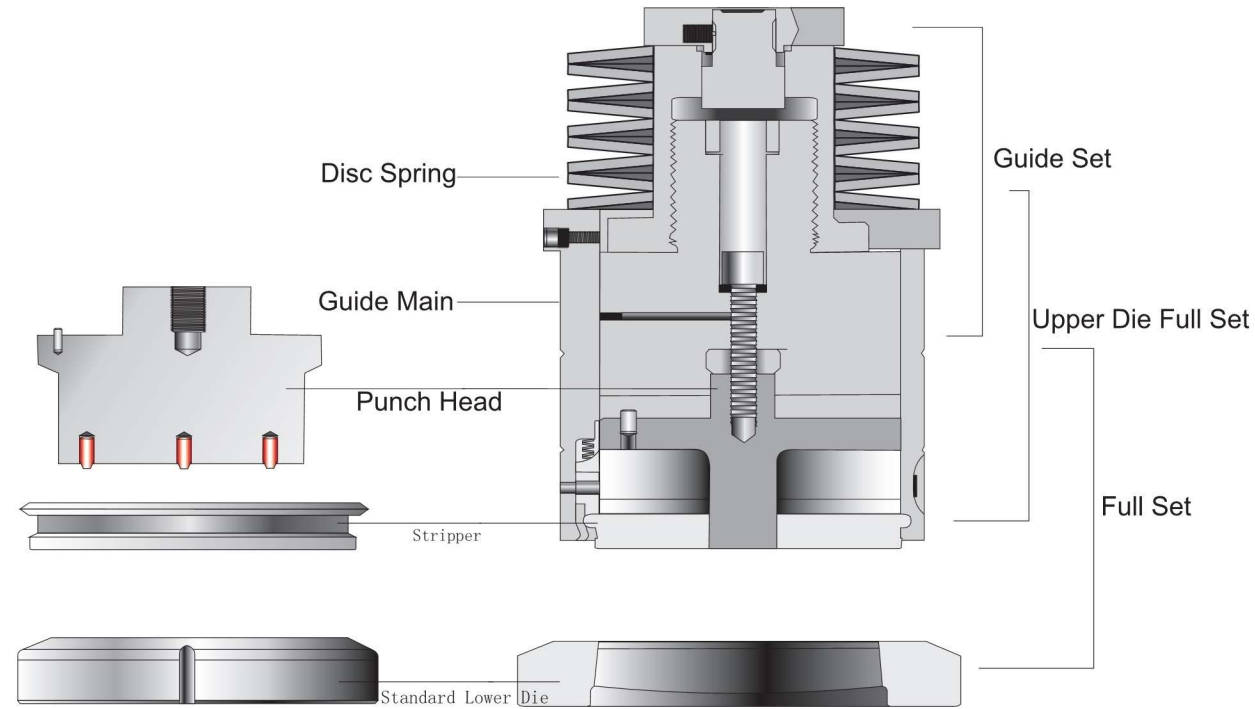
### Instructions

- ※ Standard punch edge grinding length: 5-8mm
  - ※ Dies adjustment without gasket, convenient and quick
  - ※ The standard keyway of guide sleeve is 0°, 90°, with good adaptability
  - ※ Guide is made of high-quality steel with long service life
  - ※ The whole set of mould includes upper die set and lower mould
  - ※ The upper die set includes: guide set, punch head, stripper
- Maximum plate thickness:  
medium carbon steel plate 4mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZWD-4020	Round	RO	
Upper Die Full Set	ZWD-4011	Square	SQ	
Punch Head	ZWD-4001	Rectangle	RE	
Stripper	ZWD-4002	Oval Shape	OB	
Standard Lower Die	ZWD-4003	Double-D	WD	
Guide Set	ZWD-4005	Single-D	SD	
Guide Main	ZWD-4006	Socket	SP	
Disc Spring	ZWD-60065	Hex	ST	



## E Station (Within 114.3mm Diameter)

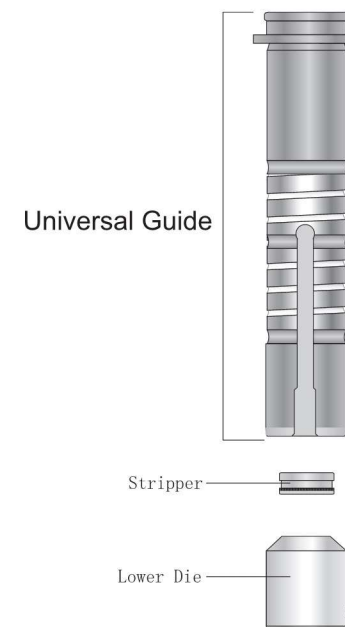


- Instructions**
- ※ Standard punch edge grinding length: 5-8mm
  - ※ Dies adjustment without gasket, convenient and quick
  - ※ The standard keyway of guide sleeve is 0°, 90°, with good adaptability
  - ※ Guide is made of high-quality steel with long service life
  - ※ The whole set of mould includes upper die set and lower die
  - ※ The upper die set includes: guide set, punch head, stripper
- Maximum plate thickness:**  
medium carbon steel plate 4mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZWE-5020	Round	RO	
Upper Die Full Set	ZWE-5011	Square	SQ	
Punch Head	ZWE-5001	Rectangle	RE	
Guide	ZWE-5002	Oval Shape	OB	
Standard Lower Die	ZWE-5003	Double-D	WD	
Stop Ring	ZWE-60066	Single-D	SD	
Striking Head	ZWE-60067	Socket	SP	
Spring	ZWE-60068	Hex	ST	



## A Station (Within 12.7mm Diameter)



- Instructions**
- ※ Standard punch edge grinding length: 5-8mm, application cost lower 60%
  - ※ Dies adjustment without gasket, convenient and quick
  - ※ The standard keyway of guide sleeve is 0°, 90°, 135°, with good adaptability
  - ※ Guide is made of high-quality steel with long service life
  - ※ The whole set of mould includes upper die set and lower die
  - ※ The upper die set includes: universal guide set, punch head, stripper and fast replacement striking head set
- Maximum plate thickness:**  
medium carbon steel plate 3-4mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZMA-1010	Round	RO	
Upper Die Full Set	ZMA-2010	Square	SQ	
Punch Head	ZMA-1001	Rectangle	RE	
Guide	ZMA-1002	Oval Shape	OB	
Standard Lower Die	ZMA-1003	Double-D	WD	
Stop Ring	ZMA-10060	Single-D	SD	
Striking Head	ZMA-10061	Socket	SP	
Spring	ZMA-10062	Hex	ST	

## B Station (Within 31.7mm Diameter)

## A Station (Within 12.7mm Diameter)

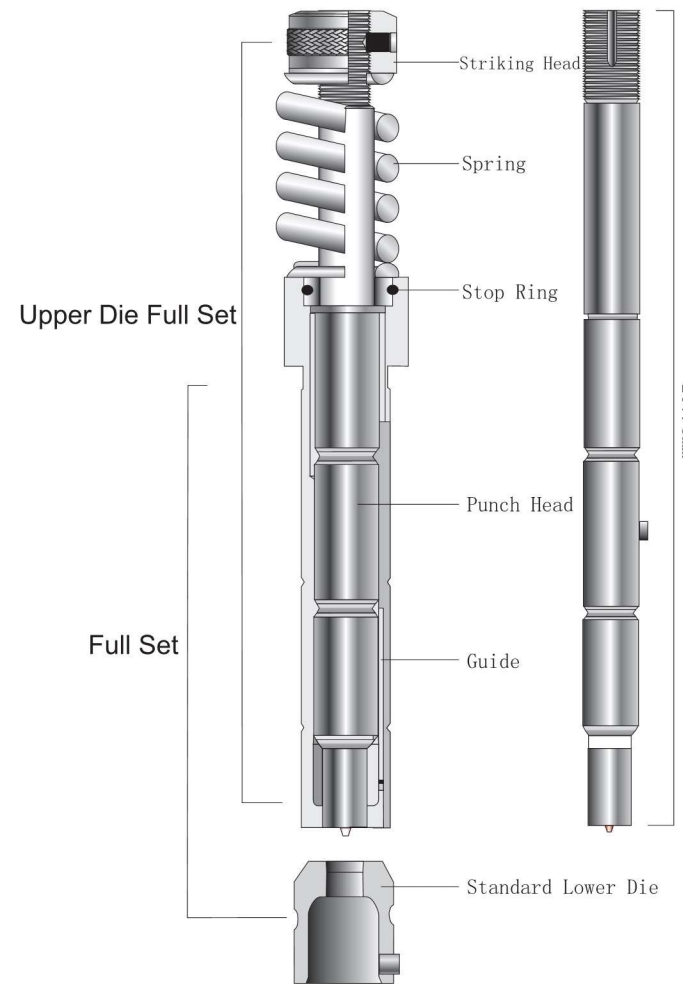


**Instructions**

- ※ Standard punch edge grinding length: 5-8mm, application cost lower 60%
- ※ Dies adjustment without gasket, convenient and quick
- ※ The standard keyway of guide sleeve is 0° 90° 135°, with good adaptability
- ※ Guide is made of high-quality steel with long service life
- ※ The whole set of mould includes upper die set and lower die
- ※ The upper die set includes: universal guide set, punch head, stripper and fast replacement striking head set

**Maximum plate thickness:**  
medium carbon steel plate 3-4mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZMB-1010	Round	RO	
Upper Die Full Set	ZMB-2010	Square	SQ	
Punch Head	ZMB-1001	Rectangle	RE	
Guide	ZMB-1002	Oval Shape	OB	
Standard Lower Die	ZMB-1003	Double-D	WD	
Stop Ring	ZMB-10060	Single-D	SD	
Striking Head	ZMB-10061	Socket	SP	
Spring	ZMB-10062	Hex	ST	



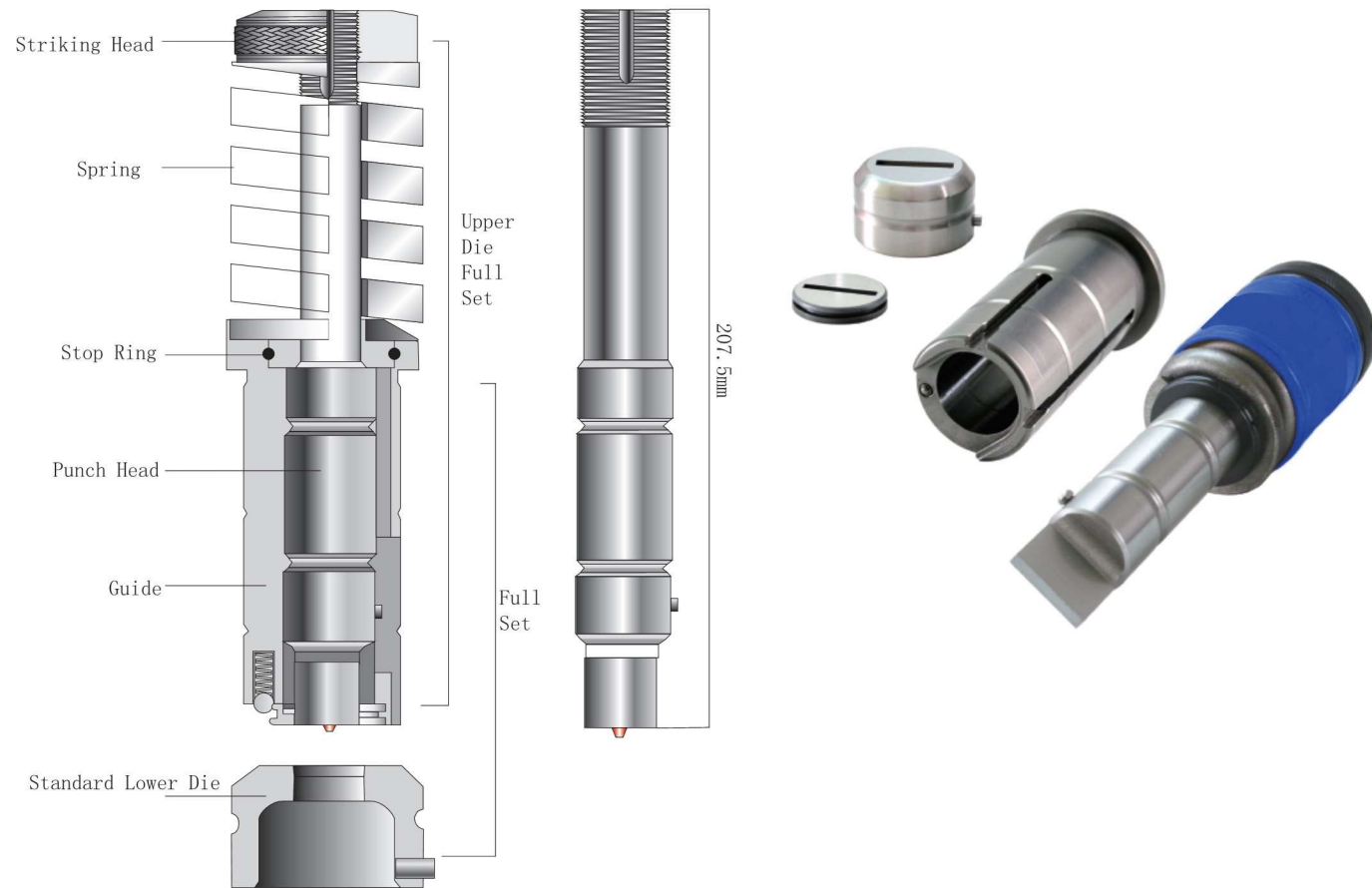
**Instructions**

- ※ Standard punch edge grinding length: 4-5mm
- ※ After grinding the punch edge, adjust the striking head to the original height
- ※ The standard keyway of guide sleeve is 0° 90° 135°
- ※ The keyway for square guide is normally 0° 135°
- ※ The whole set of mould includes upper die set and lower die
- ※ The upper die set includes: universal guide set, punch head, stripper and striking head set

**Maximum plate thickness:**  
medium carbon steel plate 5mm

Part Name	Code	Shape	Short Code	Example
Full Set	ZWA-8020	Round	RO	
Upper Die Full Set	ZWA-8011	Square	SQ	
Punch Head	ZWA-8001	Rectangle	RE	
Guide	ZWA-8002	Oval Shape	OB	
Standard Lower Die	ZWA-8003	Double-D	WD	
Stop Ring	ZWA-80066	Single-D	SD	
Striking Head	ZWA-80067	Socket	SP	
Spring	ZWA-80068	Hex	ST	

## B Station (Within 31.7mm Diameter)



Part Name	Code	Shape	Short Code	Example
Full Set	ZWB-8030	Round	RO	
Upper Die Full Set	ZWB-8031	Square	SQ	
Punch Head	ZWB-8001	Rectangle	RE	
Guide	ZWB-8002	Oval Shape	OB	
Standard Lower Die	ZWB-8003	Double-D	WD	
Stop Ring	ZWB-80086	Single-D	SD	
Striking Head	ZWB-80087	Socket	SP	
Spring	ZWB-80088	Hex	ST	

### Instructions

- ※ Standard punch edge grinding length: 4-5mm
- ※ After grinding the punch edge, adjust the striking head to the original height
- ※ The standard keyway of guide sleeve is 0°, 90°
- ※ The keyway for square guide is normally 0°, 135°
- ※ The whole set of mould includes upper die set and lower die
- ※ The upper die set includes: universal guide set, punch head, stripper and striking head set

Maximum plate thickness:  
medium carbon steel plate 5mm

## B Station (Diameter Between 1.6-15.8mm)



Part Name	Code	Shape	Short Code	Example
Full Set	ZBY-1010	Round	RO	
Upper Die Full Set	ZBY-1011	Square	SQ	
Blow Punch Head	ZBY-1001	Rectangle	RE	
Guide	ZBY-1002	Oval Shape	OB	
Blow Lower Die	ZBY-1003	Double-D	WD	
Stop Ring	ZBY-10060	Single-D	SD	
Striking Head	ZBY-10061	Socket	SP	
Spring	ZBY-10062	Hex	ST	

### Instructions

- ※ The guide assembly of the die is a general part, only the stripper needs to be replaced
- ※ The price of punch head is low, and the length of grinding edge can reach 6mm
- ※ It is easy to adjust after grinding and no gaskets are needed.

※ The whole set of mould includes upper die set and lower die

※ Upper die set: Upper die assembly installed on the turret of CNC turret punch press

Maximum plate thickness:  
medium carbon steel plate 4-5mm

## B Station (Diameter Between 1.6-31.7mm)



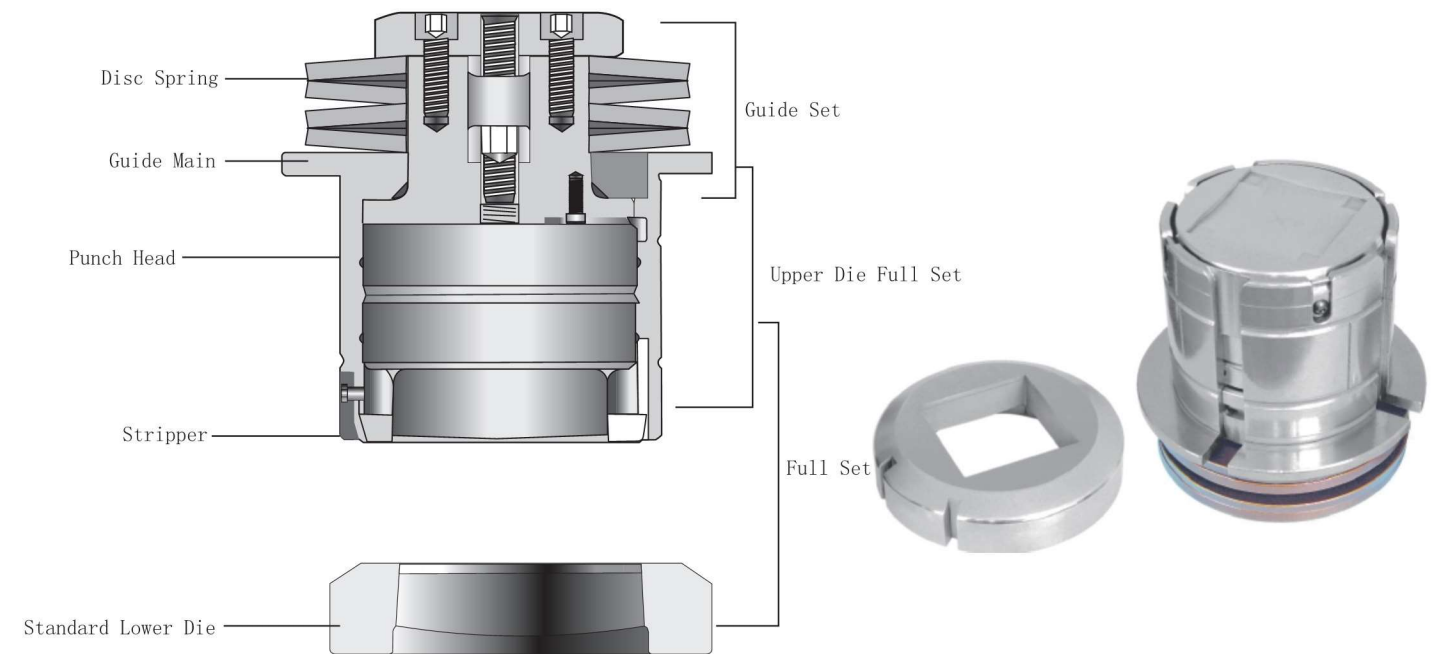
Part Name	Code	Shape	Short Code	Example
Full Set	ZBX-1010	Round	RO	
Upper Die Full Set	ZBX-1011	Square	SQ	
Punch Head	ZBX-1001	Rectangle	RE	
Guide	ZBX-1002	Oval Shape	OB	
Standard Lower Die	ZBX-1003	Double-D	WD	
Stop Ring	ZBX-10060	Single-D	SD	
Striking Head	ZBX- 10061	Socket	SP	
Spring	ZBX-10062	Hex	ST	

**Instructions**

- ※ The punch head can be grinded 6.3mm, reducing the use cost by 60%
- ※ Independent striking head assembly makes die adjustment fast
- ※ Exchange and match with international mainstream brands
- ※ The whole set of mould includes upper die set and lower die
- ※ Upper die set: Upper die assembly installed on the turret of CNC turret punch press

**Maximum plate thickness:  
medium carbon steel plate 3mm**

## D Station (Diameter Between 31.7-88.9mm)



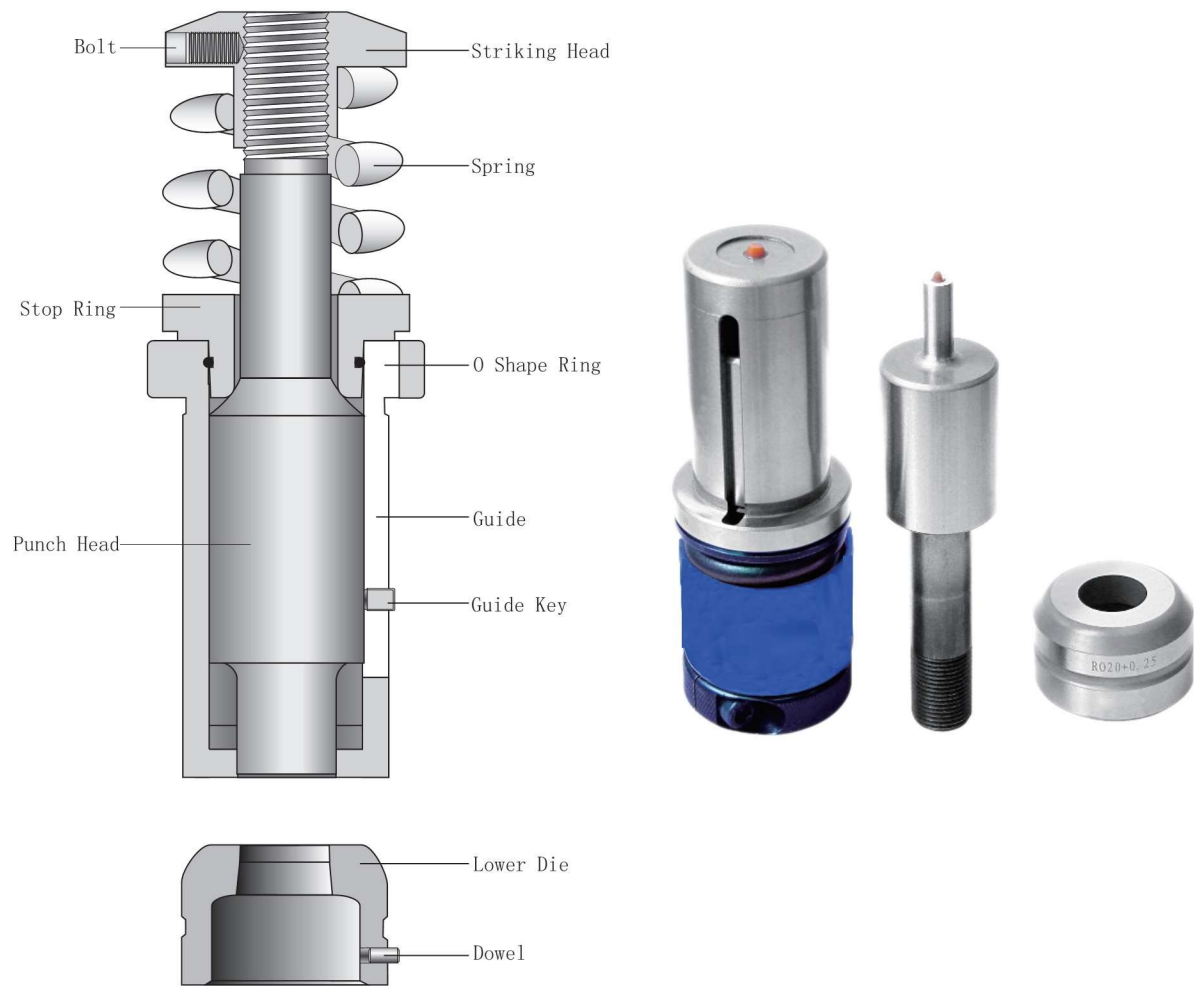
Part Name	Code	Shape	Short Code	Example
Full Set	ZBW-1010	Round	RO	
Upper Die Full Set	ZBW-1011	Square	SQ	
Blow Punch Head	ZBW-1001	Rectangle	RE	
Guide	ZBW-1002	Oval Shape	OB	
Blow Lower Die	ZBW-1003	Double-D	WD	
Stop Ring	ZBW-10060	Single-D	SD	
Striking Head	ZBW- 10061	Socket	SP	
Spring	ZBW-10062	Hex	ST	

**Instructions**

- ※ The punch head can be grinded 10mm, reducing the use cost by 60%
- ※ It is easy to adjust after grinding and no gaskets are needed.
- ※ Exchange and match with international mainstream brands
- ※ Upper die set includes: guide set, punch head and stripper

**Maximum plate thickness:  
medium carbon steel plate 4-5mm**

## JINFANGYUAN TYPE B Station (Diameter Between 1.6-31.7mm)



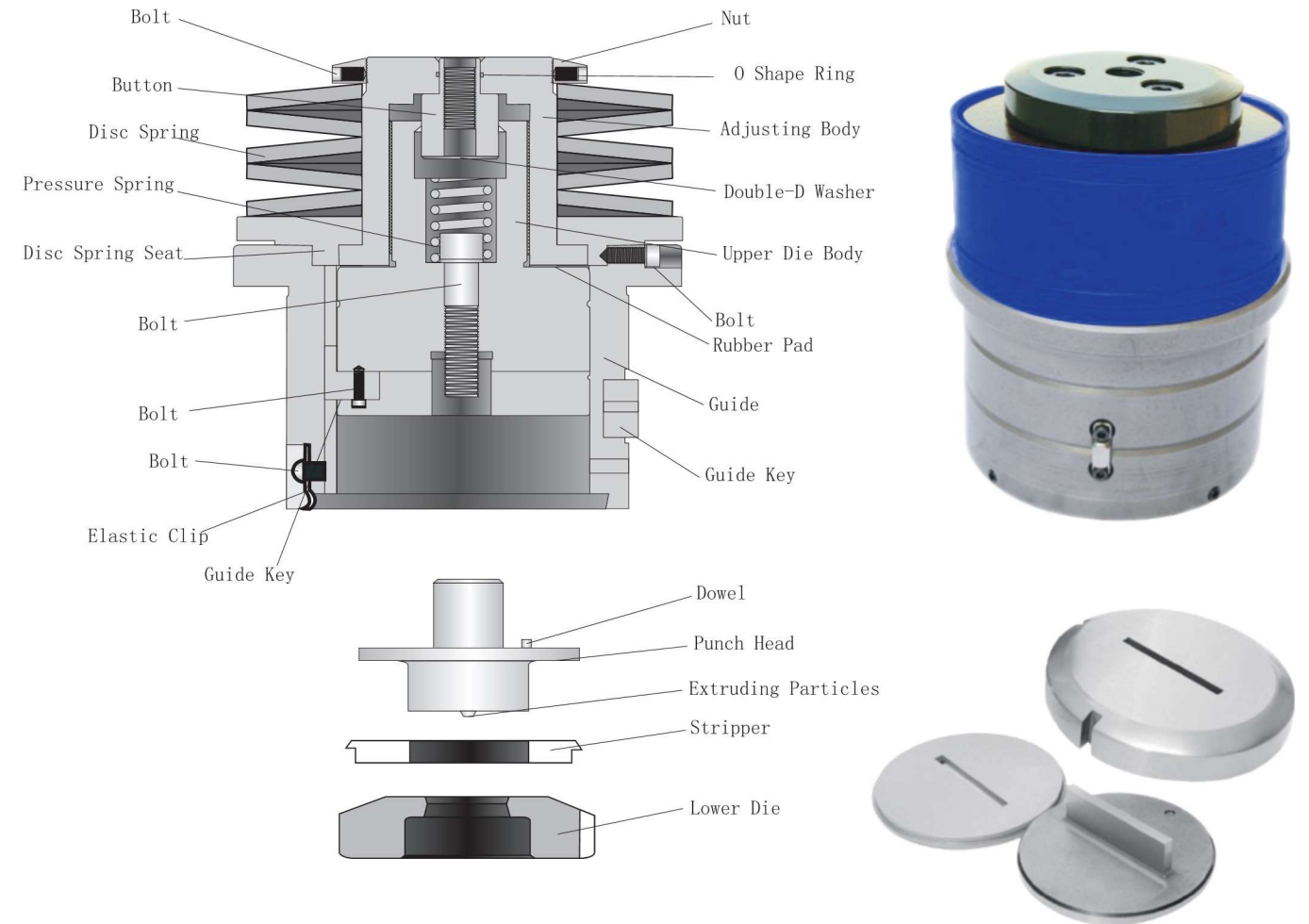
Part Name	Code	Shape	Short Code	Example
Full Set	ZBZ-1010	Round	RO	
Upper Die Full Set	ZBZ-1011	Square	SQ	
Blow Punch Head	ZBZ-1001	Rectangle	RE	
Guide	ZBZ-1002	Oval Shape	OB	
Blow Lower Die	ZBZ-1003	Double-D	WD	
Stop Ring	ZBZ-10060	Single-D	SD	
Striking Head	ZBZ-10061	Socket	SP	
Spring	ZBZ-10062	Hex	ST	

### Instructions

- ※ Standard structure mold, interchangeable with Wilson products
- ※ The whole set of mould includes upper die set and lower die
- ※ Upper die set: Upper die assembly installed on the turret of CNC turret punch press

Maximum plate thickness:  
medium carbon steel plate 4-5mm

## JINFANGYUAN TYPE D Station (Diameter Between 31.7-88.9mm)



Part Name	Code	Shape	Short Code	Example
Full Set	ZBW-1010	Round	RO	
Upper Die Full Set	ZBW-1011	Square	SQ	
Blow Punch Head	ZBW-1001	Rectangle	RE	
Guide	ZBW-1002	Oval Shape	OB	
Blow Lower Die	ZBW-1003	Double-D	WD	
Stop Ring	ZBW-10060	Single-D	SD	
Striking Head	ZBW-10061	Socket	SP	
Spring	ZBW-10062	Hex	ST	

### Instructions

- ※ The punch head can be grinded 10mm, reducing the use cost by 60%
- ※ It is easy to adjust after grinding and no gaskets are needed.
- ※ Exchange and match with international mainstream brands
- ※ Upper die set includes: guide set, punch head and stripper

Maximum plate thickness:  
medium carbon steel plate 4-5mm

## Machining Accessories



Clamp



Dowel



Extruding Particles

**Instructions**

- ※ Suit for AMADA punch press
- ※ Please tell punch press brand and model number when ordering

Name	Code	Machine Model NO.	Name	Code	Machine Model NO.	Name	Code
A station upper die dowel	ZTF-001		D station upper die dowel	ZTF-007		3mm particles	ZJL-001
A station lower die dowel	ZTF-002		D station lower die dowel	ZTF-008		4mm particles	ZJL-002
B station upper die dowel	ZTF-003		E station upper die dowel	ZTF-009		5mm particles	ZJL-003
B station lower die dowel	ZTF-004		E station lower die dowel	ZTF-010		6mm particles	ZJL-004
C station upper die dowel	ZTF-005		Clamp	ZTF-011			
C station lower die dowel	ZTF-006						

## Die Disassembly Table



Name	Code
Die Disassembly Table	ZTF-012
Disassembly base of punching die	ZTF-013
Disassembly base of forming die	ZTF-014
CDE Station Disassembly Seat	ZTF-015

## Dies Storage Case



## Moulding Accessories

## Conversion Sleeve

Station	Name	Code
B-A	Upper Die	ZHT-7080
	Lower Die	ZHT-7081
C-A	Upper Die	ZHT-7082
	Lower Die	ZHT-7083
D-A	Upper Die	ZHT-7084
	Lower Die	ZHT-7085
C-B	Upper Die	ZHT-7086
	Lower Die	ZHT-7087
D-B	Upper Die	ZHT-7088
	Lower Die	ZHT-7089
D-C	Upper Die	ZHT-7090
	Lower Die	ZHT-7091



## Centering Stick



Station	Part Name	Code
A Station	Full Set	ZDA-2020
	Upper Die	ZDA-2021
	Lower Die	ZDA-2022



Station	Part Name	Code
C Station	Full Set	ZDC-1010
	Upper Die	ZDC-1011
	Lower Die	ZDC-1012



Station	Part Name	Code
B Station	Full Set	ZDB-2020
	Upper Die	ZDB-2021
	Lower Die	ZDB-2022



Station	Part Name	Code
D Station	Full Set	ZDD-1010
	Upper Die	ZDD-1011
	Lower Die	ZDD-1012



Station	Part Name	Code
E Station	Full Set	ZDE-1010
	Upper Die	ZDE-1011
	Lower Die	ZDE-1012

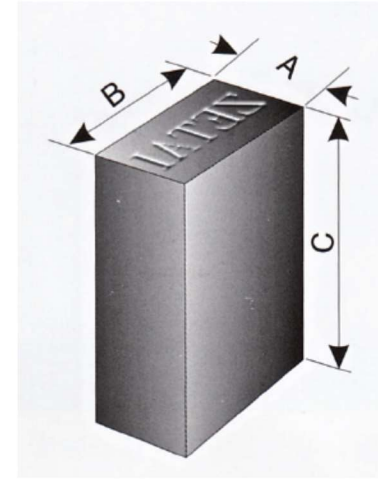
## Roller Die



- Instructions**
- ※ Forming at the same moving speed as the worktable
  - ※ Any curve shape can be processed on the rotating station
  - ※ No stamping mark on the plate
  - ※ Independent install and uninstall wheel
  - ※ The machine must have a special control program
  - ※ Material range:Stainless steel 0.8-1.5mm, Carbon steel plate 0.8-2mm, Aluminum plate 0.8-2.5mm
  - ※ The forming height is 2-3 times of the plate thickness and the width is 2 times of the height
  - ※ Maximum width is 15mm

Increase strength, reduce plate thickness and reduce cost

## Character Code



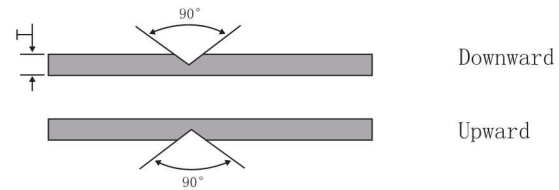
※ Font and Character Range

A B C D E F G H I J K L M  
 N O P Q R S T U V W X Y Z  
 0 1 2 3 4 5 6 7 8 9 & / . - ( )

※ Font Size Specification

Font NO.	Size A	Size B	Size C
NO. 2. 4	2. 36mm	6. 35mm	19. 05mm
NO. 3. 2	3. 175mm	6. 35mm	19. 05mm
NO. 4. 8	4. 76mm	7. 94mm	19. 05mm
NO. 6. 4	6. 35mm	9. 52mm	19. 05mm

## Spot (sample punch) Dies



Punch Press Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ T: \_\_\_\_\_



- Instructions**
- ※ No empty spotting
  - ※ Adjust the die height to control the depth of punching
  - ※ Forming direction: up, down
  - ※ Angle 90 ° , maximum plate thickness 4-5mm



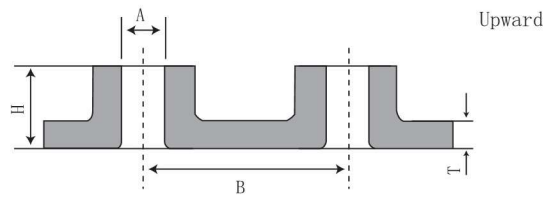
※ Character Height (1: 1)



※ Character depth, punching pressure (aluminum, carbon plate, stainless steel)

Font NO.	Depth	Pressure (AL)	Pressure (MS)	Pressure (SS)
NO. 2. 4 (Not recommended)	0. 1mm	1. 1KN	2. 8KN	8. 9KN
NO. 3. 2	0. 1mm	1. 6KN	4. 4KN	13. 3KN
NO. 4. 8	0. 2mm	3. 6KN	10. 7KN	30. 2KN
NO. 6. 4	0. 3mm	6. 2KN	16. 9KN	48. 9KN

## Flanging Die for Threaded Hole



Punch Press Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_  
 B: \_\_\_\_\_  
 H: \_\_\_\_\_  
 T: \_\_\_\_\_

- Instructions**
- ※ Pre punching firstly, and then flanging
  - ※ Programming to allow for sufficient discharge time
  - ※ Punching core of flanging tip can be replaced separately
  - ※ Forming direction: up, down
  - ※ Max plate thickness: carbon steel plate 2.3mm, aluminum 2.0mm, stainless steel 1.2mm
  - ※ Forming height: ensure 3 pitches of screw thread



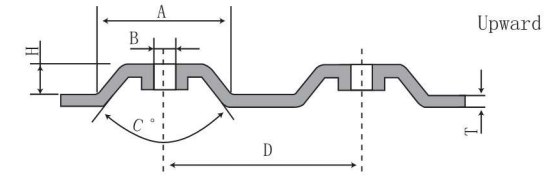
● Specification of tapped hole and flanging pre punching (carbon steel plate, aluminum plate)

Cutting Tapping	Plate Thickness T						
	0.8	1.0	1.2	1.6	2.0	2.3(exclusive of M3)	Unit: mm
M2.6	2.21	1.30	1.30	1.30	1.6		
M3	2.60	1.30	1.30	1.30	1.6		
M4	3.40	2.0	2.0	2.0	2.3	2.3	2.5
M5	4.30		2.30	2.30	2.8	2.8	3.0
M6	5.10			3.0	3.8	3.8	3.8

● Specification of tapped hole and flanging pre punching (stainless steel)

Cutting Tapping	Plate Thickness T				
	0.6	0.8	1.0	1.2	Unit: mm
M2.6	2.21	1.30	1.30	1.30	1.6
M3	2.60	1.30	1.30	1.30	1.6
M4	3.40	2.0	2.0	2.0	2.3
M5	4.30		2.30	2.30	2.8
M6	5.10			3.0	3.8

## Convex Flanging Compound Die

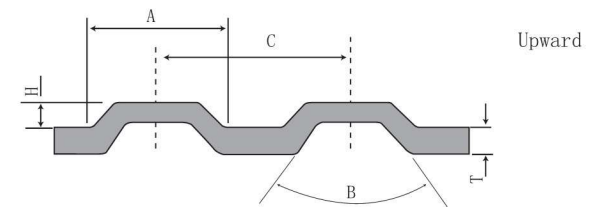


Punch Press Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_  
 B: \_\_\_\_\_  
 H: \_\_\_\_\_  
 D: \_\_\_\_\_  
 L: \_\_\_\_\_

- Instructions**
- ※ Pre punching, flanging and convex forming can be completed in one time
  - ※ Programming to allow for sufficient discharge time
  - ※ Forming direction: up



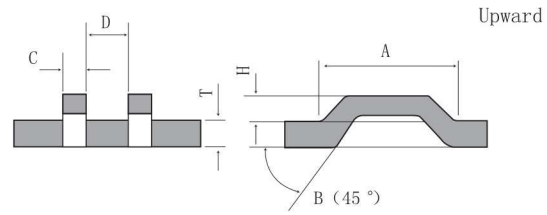
## Convex Die



Punch Press Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_  
 B: \_\_\_\_\_  
 C: \_\_\_\_\_  
 H: \_\_\_\_\_  
 T: \_\_\_\_\_

- Instructions**
- ※ Keep proper distance between the forming position and punching, plate edge and clamp
  - ※ Formable circular and non-circular
  - ※ Programming to allow for sufficient discharge time
  - ※ Forming direction: up, down

## Bridge Die

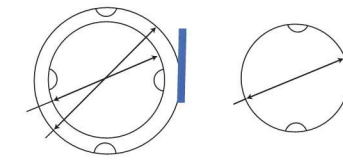


Machine Model: \_\_\_\_\_ A: \_\_\_\_\_ D: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ B: \_\_\_\_\_ H: \_\_\_\_\_  
 C: \_\_\_\_\_ T: \_\_\_\_\_

### Instructions

- ※ Can be designed as single bridge and double bridge
- ※ Programming to allow for sufficient discharge time
- ※ Forming direction: up, down
- ※ Bridge Width  $C \geq 2T$ , and  $C \geq 1.8mm$

## Knockout Die

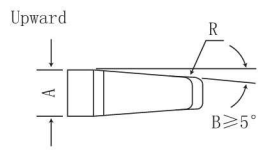


Machine Model: \_\_\_\_\_ A: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ B: \_\_\_\_\_ T: \_\_\_\_\_

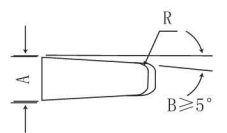
### Instructions

- ※ No empty punching
- ※ Adjust the die height to control the cutting depth
- ※ It can be designed as single knock, double knock and triple knock
- ※ It is required that the lower end point of the punch be positioned accurately
- ※ Forming direction: up, down

## Punching Forming Die



Machine Model: \_\_\_\_\_ A: \_\_\_\_\_ D: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ B: \_\_\_\_\_ R: \_\_\_\_\_  
 C: \_\_\_\_\_ H: \_\_\_\_\_ T: \_\_\_\_\_



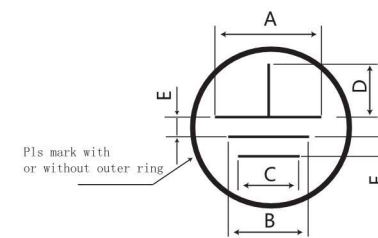
Machine Model: \_\_\_\_\_ A: \_\_\_\_\_ D: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ B: \_\_\_\_\_ R: \_\_\_\_\_  
 C: \_\_\_\_\_ T: \_\_\_\_\_



### Instructions

- ※ One die can only correspond to one plate thickness
- ※ Programming to allow for sufficient discharge time
- ※ Forming direction: up

## Marking Die



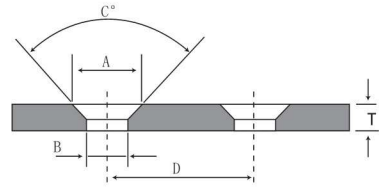
Machine Model: \_\_\_\_\_ A: \_\_\_\_\_ D: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_ B: \_\_\_\_\_ E: \_\_\_\_\_ G (width): \_\_\_\_\_  
 C: \_\_\_\_\_ F: \_\_\_\_\_ H (depth): \_\_\_\_\_

### Instructions

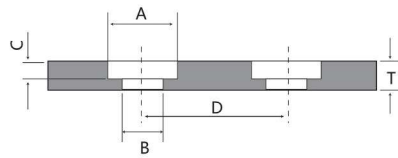
- ※ No empty punching
- ※ Adjust the die height to control the cutting depth
- ※ It is used for rotating station and can realize any direction
- ※ Forming direction: up, down



## Sinking Die



Machine Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_ D: \_\_\_\_\_  
 B: \_\_\_\_\_ T: \_\_\_\_\_  
 C: \_\_\_\_\_

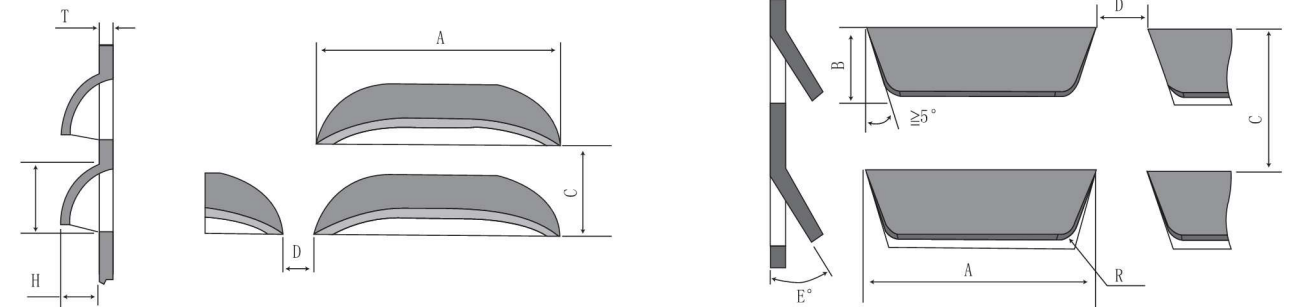


Machine Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_ D: \_\_\_\_\_  
 B: \_\_\_\_\_ T: \_\_\_\_\_  
 C: \_\_\_\_\_



- Instructions**
- ※ Pre punch first, then countersink
  - ※ Adjust the pre punching size to change the countersunk depth
  - ※ Forming direction: up, down
  - ※ Minimum plate thickness:  $T \geq 1.0\text{mm}$

## Louver

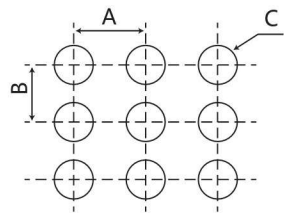


Machine Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_ D: \_\_\_\_\_  
 B: \_\_\_\_\_ H: \_\_\_\_\_  
 C: \_\_\_\_\_ T: \_\_\_\_\_  
 Machine Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_ D: \_\_\_\_\_  
 B: \_\_\_\_\_ E: \_\_\_\_\_  
 C: \_\_\_\_\_ T: \_\_\_\_\_  
 R: \_\_\_\_\_

- Instructions**
- ※ Can be closed or open
  - ※ One die can only correspond to one plate thickness
  - ※ The programming should consider the moving direction of the plate and allow enough unloading time
  - ※ No washer is needed for forming height adjustment, only plug-in is needed to be replaced for size change
  - ※ Forming direction: upward

Recommended Size of Common Louver				
Size A	50mm	80mm	80mm	80mm
Size B	10mm	10mm	12mm	15mm
Size H	5mm	6mm	6mm	6mm

## Porous Die



Machine Model: \_\_\_\_\_  
 Plate Material: \_\_\_\_\_  
 A: \_\_\_\_\_  
 B: \_\_\_\_\_  
 C: \_\_\_\_\_  
 T: \_\_\_\_\_



- Instructions**
- ※ The connection skin between holes shall not be less than 3.2mm, or more than twice the plate thickness
  - ※ Please provide the information and values shown above

TRUMPF Dies

0 Type	1 Type	2 Type	3 Type	Heavy Loading 1 Type and 2 Type
Adjust Ring	Adjust Ring	Adjust Ring	Adjust Ring	Adjust Ring
Core punching die sleeve and needle	1 Type Core Punching	2 Type Core Punching	2 Type Core Punching	Heavy Loading Core Punching 1 Type and 2 Type
Metal Stripper	Metal Stripper	Metal Stripper	Metal Stripper	Metal Stripper
1 Type Lower Die	1 Type Lower Die	2 Type Lower Die	3 Type Lower Die	Heavy Loading 2 Type Lower Die
Max. Size 10.50mm Diameter/Diagonal	Max. Size 30.00mm Diameter/Diagonal	Max. Size 76.20mm Diameter/Diagonal	Max. Size 105.00mm Diameter/Diagonal	Max. Size 52.00mm Diameter/Diagonal

TRUMPF Multi Dies

	<b>4 Stations Multi Dies-Size Ranges 0.77-16.00+0.60 Lower Die Clearance</b>
Integral Type	Split Type
Core Punching	Core Punching Cap
Lower Die	Lower Die
	<b>5 Stations Multi Dies-Size Ranges 0.77-16.00+0.60 Lower Die Clearance</b>
Core Punching	Lower Die
	<b>3&amp;6 Stations Multi Dies-Size Ranges 0.77-10.50+0.60 Lower Die Clearance</b>
Core Punching	Core Punching Cap
Lower Die	Lower Die
	<b>10 Stations Multi Dies-Size Ranges 0.77-10.50+0.60 Lower Die Clearance</b>
Core Punching	Lower Die

Group punching die (CLUSTER)  
There are alternative forms of die construction (TIP PUNCH) And Integral Type (PUNCH BODY)

Countersink flanging die (EMBOSS BURRING)  
For stretching and flanging, pre punching is required according to the shape.

Special mould for step punching (NBBLING2)  
When selecting, please also order lubricating oil wool felt pad.

Hemispherical die (DOWEL)  
There are two ways: up and down.

Vent Die (LANCE)

Three point protruding die

Vent Die (LANCE)

Cooperate with sinking die (COUNTER SINK)  
Can be processed up and down

Bridge Die (Bridge From Molding Tool)  
There are two kinds: single bridge and multi bridge.

Knockout Die (Knockout)  
Can be processed up and down

Tapping preformed hole die (BURRING)  
Bending is formed after flanging.

Half cut die (HAF SHEAR)  
There are two processing ways: up and down.,  $h \leq 0.6t$

Sink type (EMBOSSING)  
Two processing methods:  
(1) Punch and stretch at the same time  
(2) Processing (Punch and stretch separately)

Rib die (Emboss Continuous)  
There are two processing ways: up and down.,  $h \leq 0.6t$

Step Die (OFFSET)  
Pre punching is required according to the shape.

Bowl die (Bowl From Molding Tool)  
It can be up or down, and pre punching is required.

Engraving Die (1/4)  
It can process numbers, characters, figures, etc. up and down. With the automatic indexing device, a variety of characters can be processed.

Color marker (Color Marking)  
This kind of mould is used to mark the size of the material. (numbers, letters etc.)

**A1** Hexagon  
**A2** Eight sided shape  
**A3** Double-D  
**A4** Single-D  
**A5** rounded square  
**A6** Rounded rectangle  
**A7** Square  
**A8** Obround

**B1** Plug type  
**B2** parallelogram  
**B3** Rounded parallelogram  
**B4** Four inner arcs  
**B5** Circular arc  
**B6** Ovel Shape  
**B7** Gourd shape  
**B8** Long hexagon

**C1** diamond  
**C2** Rounded diamond  
**C3** Long eight sides  
**C4** Triangle  
**C5** Rounded Triangle  
**C6** Equilateral triangle  
**C7** Arc triangle  
**C8** Keyway shape

**D1** Double Keyway  
**D2** Four sided keyway  
**D3** Single circular arc keyway  
**D4** Double arc keyway  
**D5** Four sided arc keyway  
**D6** Single keyway  
**D7** Right-angled triangle  
**D8** R angle shape

**E1** Plum shape  
**E2** T shape  
**E3** + shape  
**E4** H shape  
**E5** Arc H shape  
**E6** Keyhole shape A  
**E7** Keyhole shape B  
**E8** Keyhole shape C

**F1** Four way circular arc A  
**F2** Four way circular arc B  
**F3** Four way R angle  
**F4** Four way circular arc A  
**F5** Arc Obround A  
**F6** Arc Obround B  
**F7** Circular keyhole A  
**F8** Circular keyhole B

**G1** Cross keyhole  
**G2** Keyhole  
**G3** Double sided keyhole  
**G4** Four sided keyhole  
**G5** Single sided keyhole  
**G6** Arc T Shape  
**G7** U shape A  
**G8** U shape B

## Punch Knowledge

### Formula of stamping tonnage:

Core punching without oblique section—formula:

Punching core circumference (unit) inch (mm) x sheet thickness (unit) inch (mm) x material shear strength (unit) ton / Square inch (n / mm<sup>2</sup>) = punching ton (KN)

The shear strength is in metric tons per square inch (KN/mm<sup>2</sup>):

Aluminum 5052 H32=15.0 (0.2068) Brass=17.5(0.2413) Mild steel=25.0 (0.3447) Stainless steel 304=50.0 (0.6894)

Example: Use 1.000 (25.4) square core punching. 120(3.0) mild steel, the perimeter of punching core is 4.000 (101.6)

Plate material thickness is .120(30) shear strength is 25.0 (0.3447) American Ton, square inch N square millimeter

4.000in. x .120in. x 25US tons/in<sup>2</sup>=12 US tons (101.6mm x 3.0mm x 0.3447kN/mm<sup>2</sup>=105KN)

Punching core with oblique section - formula:

Previous formula stamping tons (KN) x Shear coefficient in the following table=Stamping tonnage (KN)

9.8千牛 (KN) =1公制 吨

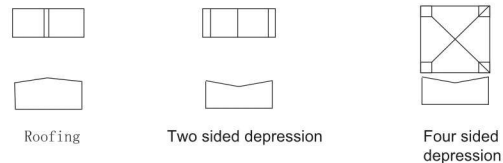
For stamping .050 (1.2) to .025 (6.4) thick plate shear coefficient of punching core with oblique section:

Plate thickness	.050(1.2)	.060(1.5)	.075(1.9)	.105(2.7)	.120(3.0)	.135(3.4)	.165(4.2)	.190(4.8)	.250(6.4)
.060(1.5) oblique depth.50	.50	.58	.72	.75	.78	.83	.85	.90	
.120(3.0) oblique depth.50	.50	.50	.50	.50					

Note: if it is within the range of tons of press, the manufacturer does not recommend to use oblique section to reduce tons of press. Because this will increase the stamping speed and make the die speed up to tons. And make the punching capacity of punch become redundant.

### Suggestions for core punching section:

Station	Description	Standard	Optional
1/2" A	Circular and heteromorphic	NO	NO
1 1/4" B	Circular and heteromorphic	Roofing	NO
2" C	Circular	NO	Two sided depression
	Rectangular	NO	Roofing
	Width < .188 (4.78) Rectangular	NO	Two sided depression
	Length > .188 (4.78) Square	NO	Four sided depression



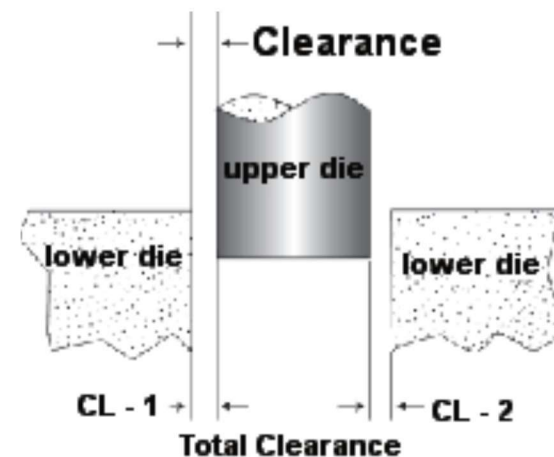
Station	Description	Standard	Optional
3 1/2" D	Circular	NO	Two sided depression
	Rectangular	NO	Roofing
	Width < .188 (4.78) Rectangular	NO	Two sided depression
	Width > .188 (4.78) Rectangular	NO	Four sided depression
4 1/2" E	Circular	Roofing	Two sided depression
	Rectangular	Roofing	Roofing
	Width < .188 (4.78) Rectangular	Roofing	Two sided depression
	Width > .188 (4.78) Square	Roofing	Four sided depression

### Die Shape and Code:

模具形状 Appearance	代号 Type	图样 Design
圆形 Round	RO	
正方形 Square	SQ	
长方形 Rectangle	RE	
长圆形 Ellipse	OB	
双D形 Double D	WD	
单D形 Single D	SD	
插座形 Socket Shape	SP	

### Recommended Clearance Between Upper and Lower Die:

上下模间隙 Clearance	材料 Materials		
	中碳钢 Medium steel	铝 Aluminium	不锈钢 Stainless
板厚 Thickness			
0.8-1.6	0.15-0.2	0.15-0.2	0.15-0.3
1.6-2.3	0.2-0.3	0.2-0.3	0.3-0.4
2.3-3.2	0.3-0.4	0.3-0.4	0.4-0.6
3.2-4.5	0.4-0.6	0.4-0.6	0.6-1.0
4.5-6.9	0.6-0.9	0.6-0.7	



By checking the situation of punching scrap, it can be determined whether the die clearance is appropriate. If the clearance is too large, there will be rough undulating fracture surface and small bright surface. The larger the clearance is, the larger the angle between the fracture surface and the bright surface is. When punching, there will be curling and fracture, even a thin edge protrusion. On the contrary, if the gap is too small, the scrap will have a small angle fracture surface and a large bright surface. When notching, step punching, shearing and other local stamping are carried out, the lateral force will deflect the punch and cause the unilateral clearance to be too small,

## Precautions For Mold Use



Please read the die instructions carefully before using the die, and operate the die according to the use method of the die instructions, otherwise, it will cause die damage and personal danger.

- 1、 Before starting the machine, check and confirm the die. If the die edge is found to be cracked, deformed or abnormal, please do not use it again.
- 2、 Special die for CNC punch is strictly prohibited to operate in violation of regulations.
- 3、 It is strictly forbidden to transform the die structure without permission. Unreasonable transformation is very dangerous.
- 4、 Don't use it in excess of tons of die pressure resistance (see the list first), otherwise the machine tool and die may be damaged.
- 5、 Please pay attention to the wear state of the die edge, and timely repair of the die is conducive to reducing the burr of punching and improving the quality of products.
- 6、 Please pay attention to whether the length of the die is within the safe processing range. Using too short punch head may cause damage to the guide sleeve or even the machine.

The use and maintenance level of the die directly affects the processing quality of the workpiece and the service life of the die. Die is also an important part of controlling the running cost of equipment. Therefore, it will play an important role in improving efficiency and reducing cost to understand and master the following knowledge of die maintenance.

1. Ensure the best die clearance

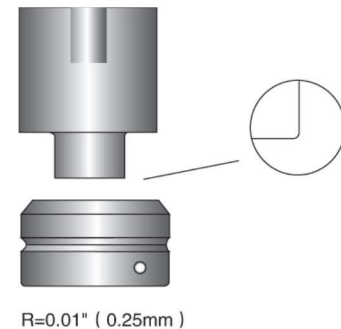
Die clearance refers to the sum of the clearance on both sides when the punch enters the lower die. It is related to sheet metal thickness, material and stamping process. Selecting proper die clearance can ensure good punching quality, reduce burr and collapse, keep sheet metal flat, effectively prevent strip and prolong die life.

Sometimes the edge of the blade is too offset to scratch the lower die, resulting in rapid wear of the upper and lower dies. When the die is pressed with the best clearance, the fracture surface of the scrap and the bright surface have the same angle and coincide with each other, so that the punching force is minimized and the burr of the punching is also very small.

2. Timely grinding can effectively prolong the service life of the die  
If the workpiece has excessive burr or abnormal noise during punching, it may be that the die is passivated. Check the punch and lower die. When the edge of the punch is worn to produce an arc with a radius of about 0.10 mm, it needs to be sharpened. The practice shows that it can not only keep the good quality of workpiece, reduce the punching force, but also prolong the service life of die by more than one time of the micro grinding is often carried out instead of the grinding when it has to do so.

In addition to knowing when to grind the die, it is particularly important to master the correct grinding method. The grinding procedure of die edge is as follows:

- 1) During grinding, the punch is clamped vertically in the V-groove or clamp of the magnetic chuck of the surface grinder, and the grinding amount each time is: 0.03~0.05mm, repeat grinding until the punch is sharp, and the maximum grinding amount is generally 0.1~0.3mm.
- 2) Use sintered alumina grinding wheel, hardness d ~ J, abrasive size 46 ~ 60, the best choice for high-speed steel grinding wheel.
- 3) When the grinding force is large or the mold is close to the grinding wheel, adding coolant can prevent the mold from cracking or annealing due to overheating. The high-quality multi-purpose coolant shall be selected according to the requirements of the manufacturer.
- 4) Downward feed of grinding wheel 0.03~0.08 mm, Infeed 0.13~0.25mm, Infeed rate 2.5~3.8m/min.
- 5) After grinding, polish the cutting edge with oilstone, remove the burr and grind out the radius 0.03~0.05 mm rounded edge, it can prevent the blade from cracking.
- 6) The punch shall be demagnetized and sprayed with lubricating oil to prevent rusting.



### 3. Methods to eliminate and reduce sticking

Due to the pressure and heat during punching, the fine particles of sheet metal will be bonded to the punch surface, resulting in poor punching quality. The removal of sticking material can be polished with fine oilstone, and the grinding direction should be the same as the movement direction of punch, so that further sticking can be avoided after polishing. Do not use coarse gauze and other grinding, so as to avoid rougher punch surface and more prone to sticking. Reasonable die clearance, good punching process and necessary lubrication of sheet metal will reduce the generation of sticking.

To prevent overheating, lubrication is generally used, which will reduce friction. If it is unable to lubricate or there is scrap rebound, the following method can be adopted: alternately use multiple punches of the same size to punch in turn, which can make it have a longer cooling time before being reused. Stop using the overheated die. It can interrupt the long-term repetitive work or reduce the punching frequency by programming the control of the die change.

### 4. Measures to prevent sheet metal deformation when punching many holes

If many holes are punched in one plate, the plate cannot be kept flat due to the accumulation of punching stress. During each punching, the material around the hole will deform downward, resulting in tensile stress on the upper surface and compressive stress on the lower surface. For a small number of punches, the effect is not obvious, but when the number of punches increases, the tensile and compressive stresses accumulate in some places until the material deforms. One way to eliminate this kind of deformation is to punch every other hole first, and then return to punch the remaining holes. In this way, although the stress will also be generated, the stress accumulation in the same direction of sequential stamping will be relieved, and the stress of the two groups of holes before and after will be offset each other, so as to prevent the deformation of the sheet metal.

### 5. Try to avoid cutting too narrow strip

When the die is used to cut the sheet with the width less than the thickness of the sheet, the punch will be bent and deformed due to the lateral force, the gap on one side will be too small or the wear will be intensified, and the lower die will be scratched seriously, so that the upper and lower dies will be damaged at the same time. It is recommended not to step punch the narrow strip with the width less than 2.5 times the plate thickness. When cutting too narrow strip, the sheet will tend to bend into the opening of the lower die instead of being completely cut off, or even wedge into the side of the die. If the above situation cannot be avoided, it is recommended to use the full guide die with the backing plate supporting the punch.

### 6. Surface hardening of punch and its application

Although heat treatment and surface coating can improve the surface characteristics of punch, it is not the general method to solve the stamping problem and extend the die life. Generally speaking, the coating improves the surface hardness of the punch and improves the side lubricity, but in the case of large tonnage and hard material stamping, these advantages disappear after about 1000 times of stamping. For the following cases, a surface hardening punch can be used: punching soft or viscous materials (such as aluminum); punching thin abrasive materials (such as glass epoxy sheet); punching thin hard materials (such as stainless steel); punching frequently; abnormal lubrication. Surface hardening usually adopts titanium plating, nitriding and other methods. The surface hardening layer is a molecular structure with a thickness of 12-60 μm. It is a part of the punch matrix, not just the coating. The hardened die can be sharpened in the usual way. Surface hardening can reduce the wear of the die when punching the stainless steel plate, but it can not extend its service life. Proper lubrication, timely grinding and operation according to regulations are effective methods.



### 7. Maintenance of punch die position in case of bad centering

If the die position of the punch is bad centering, resulting in the rapid passivation of the die and poor processing quality of the workpiece, the following maintenance can be carried out: check the level of the machine tool and readjust it if necessary; check and lubricate the die hole and guide key on the rotary table, and repair in time if there is any damage; clean the lower die seat of the rotary table, so that the lower die can be installed accurately, and check the wear of the key or key slot, which is necessary Replace when necessary; use special mandrel to calibrate die position, and adjust in time in case of deviation. The above content is for the general situation, in view of the specific types and specifications of presses and dies are different, users should combine the actual to understand and summarize the experience, and play the best use performance of the dies.



