



MaxinPath
迈新途科技

Cemented Carbide Drawing Die





Our superiority



- We have been concentrating on the specialized fields for 50 years.
- The products are of top quality. Standardized and customized products in various grades and types are available.
- We are a state-rank high tech company, having a postdoctoral scientific research workstation
- Sparring no efforts to develop and seek for new materials to improve product quality and new processing methods to maximize machining practice.





MaxinPath

迈新途科技



Content

Grades, properties and recommended applications of cemented carbide for drawing	1
Classification and type indication rules of cemented carbide drawing dies	2
Type 11 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	4
Type S11 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	6
Type Z11 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	7
Type Z11 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals (improved)	8
Type 13 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	10
Type S13 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	13
Type Z13 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals	15
Type Z13 cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals (improved)	16
Type 22 cemented carbide core blanks of drawing dies for drawing tubes of non-ferrous metals	18
Type 23 cemented carbide core blanks of drawing dies for drawing tubes of non-ferrous metals	20
Type 30 cemented carbide core rod blanks of drawing dies for drawing tubes	21
Type 30 cemented carbide core rod blanks of drawing dies for drawing tubes (improved)	23
Type 31 cemented carbide core rod blanks of drawing dies for drawing tubes	24
Type 40 cemented carbide core blanks of drawing dies for drawing square rods	25
Type 41 cemented carbide core blanks of drawing dies for drawing rectangle rods	27
Type 42 cemented carbide core blanks of drawing dies for drawing flat rods	28
Type 60 cemented carbide core blanks of drawing dies for drawing hexagonal rods of ferrous metals	31
Technical requirements of products tolerances	33

Grades, properties and recommended application of cemented carbide for drawing dies

Grade	Physical and mechanical properties			Recommended application
	Density(g/cm ³)	Hardness (HRA)	Transverse rupture strength(N/mm ²)	
YG6X	14.93	92.5	2800	good wear resistance; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm.
YG6A	14.70	93.0	2500	good wear resistance; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm.
ZK10UF	14.85	93.0	2600	comprehensive properties better than YG6X; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm, requiring a higher surface roughness.
ZK20UF	14.60	92.5	2600	not only toughness but also good wear resistance; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm, requiring a higher surface roughness, in condition of a larger stress.
ZK30UF	14.40	91.5	3100	not only toughness but also good wear resistance; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm, requiring a higher surface roughness, in condition of a larger stress.
ZK20(YG6)	14.95	91.2	2800	not only toughness but also good wear resistance; suitable for drawing steel wires, wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 20mm, or tubes of steel, non-ferrous metals and alloys with a diameter less than ϕ 10mm, requiring a higher surface roughness, in condition of a larger stress.

Grade	Physical and mechanical properties			Recommended application
	Density(g/cm ³)	Hardness (HRA)	Transverse rupture strength(N/mm ²)	
ZK30(YG8)	14.72	90.5	2800	suitable for drawing steel wires,wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 50mm, or tubes of steel ,non-ferrous metals and alloys with a diameter less than ϕ 35mm in condition of a larger stress.
ZL35	14.43	89.2	3000	suitable for drawing steel tubes and rods,or wires,rods and tubes of non-ferrous metals and alloys,in condition of a very large stress and large compression rate.
YG15	14.05	87.8	3200	suitable for drawing steel tubes and rods,or wires,rods and tubes of non-ferrous metals and alloys,in condition of a very large stress and large compression rate.
ZL35F	14.00	88.7	3200	good toughness,resistance better than that of Yg15;suitable for drawing steel tubes and rods,or wires,rods and tubes of non-ferrous metals and alloys,in condition of a very large stress and large compression rate.
YG6Z	14.85	90.5	2200	suitable for drawing steel wires,wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 50mm, or tubes of steel ,non-ferrous metals and alloys with a diameter less than ϕ 20mm in condition of a larger stress.
YG8Z	14.70	89.5	2400	suitable for drawing steel wires,wires and rods of non-ferrous metals and alloys with a diameter less than ϕ 50mm, or tubes of steel ,non-ferrous metals and alloys with a diameter less than ϕ 35mm in condition of a larger stress.



classification and type indication rules of cemented carbide drawing dies

1 Classification of the products

- 1.1 The series YS of drawing dies includes: type S11(round hole dies) 、 type S13(round hole dies);
- 1.2 The series YB of drawing dies includes: type 11(round hole dies), type 13(round hole dies) , type 22(round hole dies) , type 23(round hole dies) , type 30(core head dies) , type 31(core head dies) , type 40(multilateral hole dies) , type 41(multilateral hole dies) , type 42(multilateral hole dies) , type 60(multilateral hole dies) .
- 1.3 The series Z of drawing dies includes: type Z11(round hole dies), type Z11 improved (round hole dies), type Z13(round hole dies), type Z13 improved (round hole dies).

2 Type indication rules of drawing die blanks

Type type of drawing die blanks consists of five codes type namely: class, outside diameter, height, compression angle (or outside conical angle), and parameter of inside hole.

example

11 - 013 10 10 - 1.6
 (1) (2) (3) (4) (5)

- (1). code of type class;
- (2). code of outside diameter: indicated with three figures (unit in mm), zero will be added at the ahead of figures when the figures are less than three.
- (3). code of height: indicated with two figures (unit in mm), zero will be added at the ahead of figures when the figures are less than two.
- (4). code of compression angle (or outside conical angle): indicated with two figures (unit in degree), two zero will be used when there is no compression angle (or outside conical angle).
- (5). code of the internal hole:

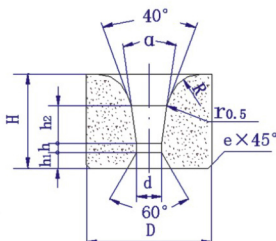
The round inside hole will be indicated with inside diameter d (unit in mm), two places of decimals will be taken when the inside diameter is not larger than 1 mm, and one places of decimals will be taken when the inside diameter is larger than 1 mm.

The quadrilateral hole will be indicated with a (hole length) $\times$ b (hole width), (unit in mm), two places of decimals will be taken when the length or width of the inside hole is not larger than 1 mm, and one places of decimals will be taken when the length or width of the inside hole is larger than 1 mm.

The hexagon hole will be indicated with s , s is the size of inscribed circle, unit in mm. two places of decimals will be taken when the size of inscribed circle is not larger than 1 mm, and one places of decimals will be taken when the size of inscribed circle is larger than 1 mm.

Note: the unit of a outside and inside diameter, height will be indicated in mm, and the angle will be indicated in degree.

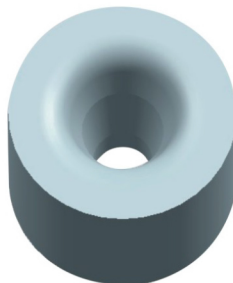
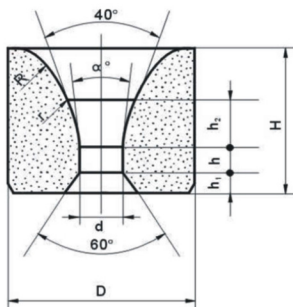
Type 11 for drawing wires of ferrous and non-ferrous metals



Type	Former type	Basic dimensions			Referential dimensions						approximate weight(g)
		D	H	d	h	h ₁	h ₂	R	α	e	Zk30
11-0080610-0.4	11-0.4	8	6	0.4	0.3	1	1.2	1.5	10°	0.5	4.4
11-0080610-0.6	11-0.6			0.6	0.4		1.4				4.4
11-0080610-0.8	11-0.8			0.8	0.6		1.8				4.3
11-0080610-1.0	11-1.0			1	0.6		2				4.3
11-0131010-0.4	11-0.4-13	13	10	0.4	0.3	1.2	2	2		1	18.8
11-0131010-0.6	11-0.6-13			0.6	0.4		2.2				18.8
11-0131010-0.8	11-0.8-13			0.8	0.6		2.5				18.8
11-0131010-1.0	11-1.0-13			1	0.7		3				18.7
11-0131010-1.3	11-1.3			1.3	1	18.5					
11-0131010-1.6	11-1.6			1.6		18.5					
11-0131010-1.8	11-1.8	13	10	1.8	1.2	1.2	4	2	10°	1	18.5
11-0131010-2.0	11-2.0			2							18.5
11-0131010-2.3	11-2.3			2.3							1.4
11-0161410-0.4	11-0.4-16	16	14	0.4	0.3	1.5	2	3	10°	1	39.0
11-0161410-0.6	11-0.6-16			0.6	0.4		2.2				38.8
11-0161410-0.8	11-0.8-16			0.8	0.6		2.5				38.5
11-0161410-1.0	11-1.0-16			1	0.7		3				38.5
11-0161412-1.3	11-1.3-16			1.3	1		4				39.1
11-0161412-1.8	11-1.8-16			1.8	1.2		4.5				38.9
11-0161412-2.3	11-2.3-16			2.3	1.4		5				38.4
11-0161412-2.8	11-2.8			2.8							38.6
11-0221814-1.8	11-1.8-22			1.8							1.2
11-0221814-2.3	11-2.3-22	2.3	1.4	7	97.0						
11-0221814-2.8	11-2.8-22	2.8			95.8						
11-0221814-3.3	11-3.3	22	18		3.3	1.8	2.5	7	14°	1.2	95.3
11-0221814-3.8	11-3.8			3.8	94.2						
11-0221814-4.2	11-4.2			4.2	2.2						94.0
11-0221814-4.7	11-4.7			4.7	2.4	92.8					
11-0222014-5.2	11-5.2			5.2	2.6	8					100.0
11-0222014-5.7	11-5.7			5.7	2.8						99.5

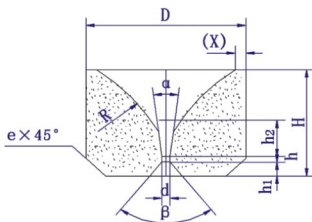
Type	Former type	Referential dimensions				approximate weight(g)
		D	H	d	α	Zk30
11-0120814-0.4	LZ-08002	12	8	0.4	14°	13.1
11-0120814-0.5	LZ-06001			0.5		13.1
11-0120910-0.6	LZ-00019	12	9	0.6	10°	12.9
11-0120910-0.7	LZ-05001			0.7		13.0
11-0120910-0.8	LZ-00020			0.8		13.0
11-0120910-1.0	LZ-00021			1.0		12.9
11-0120910-1.3	LZ-00022			1.3	14°	12.8
11-0120914-0.7	LZ-06017			0.7		13.1
11-0120917-0.7	LZ-08003			0.7		13.3
11-0151014-3.5	LZ-00009	15	10	3.5	14°	22.0
11-0161416-2.3	LZ-84016	16	14	2.3	16°	38.2
11-0161416-2.6	LZ-84031			2.6		37.7
11-0161416-2.8	LZ-84017			2.8		38.3
11-0161416-3.0	LZ-06002			3		38.2
11-0191612-1.5	LZ-00031	19	16	1.5	12°	60.0
11-0201416-5.5	LZ-00013	20	14	5.5	16°	52.0
11-0201416-6.0	LZ-00014			6.0		51.5
11-0201716-1.6	LZ-07004		17	1.6		76.0
11-0201716-1.8	LZ-98018			1.8		75.0
11-0201716-2.0	LZ-98017			2.0		75.0
11-0201716-2.3	LZ-98016			2.3		74.5
11-0201716-2.8	LZ-98015			2.8		74.0
11-0201716-3.3	LZ-98014			3.3		72.5
11-0201716-3.8	LZ-98013			3.8		73.5
11-0201716-4.7	LZ-98012			4.7		71.0
11-0211510-1.9	LZ-06003	21	15	1.9	10°	68.3
11-0211510-2.3	LZ-06004			2.3		67.8
11-0211610-2.7	LZ-06005		16	2.7		71.4
11-0211610-3.1	LZ-06006			3.1		71.7
11-0211710-4.7	LZ-08001		17	4.7	11°	71.5
11-0211711-3.5	LZ-06007			3.5		72.3
11-0211711-3.9	LZ-06008			3.9		72.3
11-0211811-4.3	LZ-06009		18	4.3		74.5
11-0211811-4.7	LZ-06010			4.7		74.7
11-0211811-5.1	LZ-06011			5.1		73.7
11-0211811-5.4	LZ-06012			5.4		73.7
11-0221818-3.8	LZ-84020	22	18	3.8	18°	95.5
11-0221818-4.2	LZ-84021			4.2		93.0
11-0221818-4.7	LZ-84022			4.7		91.0
11-0221818-5.2	LZ-84023			5.2		92.0
11-0221818-5.7	LZ-84024			5.7		92.0
11-0251710-2.0	LZ-06013	25	17	2	10°	110.0
11-0251710-2.4	LZ-06014	25	17	2.4	10°	110.0
11-0251710-2.8	LZ-06015			2.8		109.5
11-0251810-3.2	LZ-06016		18	3.2		115.5

Type S11 Cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals



Type	Former type	Basic dimensions			Referential dimensions					approximate weight(g)					
		D	H	d	h	h ₁	h ₂	R	α	Zk30					
S11-0080612-0.3	S11-0.3	8	6	0.3	0.3	1	1.2	2	12°	4.4					
S11-0080612-0.4	S11-0.4			0.4						4.4					
S11-0080612-0.6	S11-0.6			0.6	0.4		1.4			4.4					
S11-0080612-0.8	S11-0.8			0.8	0.6		1.8			4.4					
S11-0080612-1.0	S11-1.0			1						4.4					
S11-0131014-0.4	S11-0.4-13	13	10	0.4	0.3	1.2	2	4	14°	18.6					
S11-0131014-0.6	S11-0.6-13			0.6	0.4						18.5				
S11-0131014-0.8	S11-0.8-13			0.8	0.6		2.5			18.4					
S11-0131014-1.0	S11-1.0-13			1			3			18.3					
S11-0131016-1.6	S11-1.6			1.6	1		3.5				18.2				
S11-0131016-1.8	S11-1.8			1.8	1.2						18.2				
S11-0131016-2.0	S11-2.0			2							18.0				
S11-0131016-2.3	S11-2.3			2.3						1.4		18.1			
S11-0161416-0.4	S11-0.4-16			16	14		0.4			0.3	1.5	4	5	16°	38.9
S11-0161416-0.6	S11-0.6-16						0.6			0.4					
S11-0161416-0.8	S11-0.8-16	0.8	0.6				39.0								
S11-0161416-1.0	S11-1.0-16	1					38.8								
S11-0161416-1.3	S11-1.3-16	1.3	0.8				38.6								
S11-0161416-1.8	S11-1.8-16	1.8	1.2				38.2								
S11-0161416-2.3	S11-2.3-16	2.3	1.4			1.5	4	16°	37.8						
S11-0161416-2.8	S11-2.8-16	2.8							37.3						
S11-0221818-1.8	S11-1.8-22	22	18	1.8	1.2	2.5	6	5	18°	95.5					
S11-0221818-2.3	S11-2.3-22			2.3	1.4						95.0				
S11-0221818-2.8	S11-2.8-22			2.8							94.0				
S11-0221818-3.3	S11-3.3			3.3	1.6						93.2				
S11-0221818-3.8	S11-3.8			3.8							92.0				
S11-0221818-4.2	S11-4.2			4.2	1.8						90.8				
S11-0221818-4.7	S11-4.7			4.7							89.6				
S11-0221818-5.2	S11-5.2			5.2							89.0				
S11-0221818-5.7	S11-5.7									2		87.0			

Type Z11 Cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals



Type	Former type	Basic dimensions			Referential dimensions								approximate weight(g)
		D	H	d	h	h ₁	h ₂	R	α	β	e	x*	Zk30
Z11-0080614-0.4	Z11-0.4-08	8	6	0.4	0.3	0.8	1.5	4.4	14°	75°	0.5	1.2	4.4
Z11-0080614-0.6	Z11-0.6-08			0.6	0.4		1.65	4					4.4
Z11-0080614-0.8	Z11-0.8-08			0.8	0.6		1.6	3.8					4.4
Z11-0080614-1.0	Z11-1.0-08			1			1.8	3.5					4.4
Z11-0121014-0.6	Z11-0.6-12	12	10	0.6	0.4	1.2	2.8	7.4	14°	75°	1	1.55	15.9
Z11-0121014-0.8	Z11-0.8-12			0.8	0.6		2.85	7					15.7
Z11-0121014-1.0	Z11-1.0-12			1			3	6.8					15.7
Z11-0121014-1.2	Z11-1.2-12			1.2	0.8		3.2	6.5					15.7
Z11-0121016-1.4	Z11-1.4-12			1.4					3.5				5.6
Z11-0121016-1.6	Z11-1.6-12			1.6	1		3.5	5.3	15.5				
Z11-0121016-1.8	Z11-1.8-12			1.8	1.2				3.6				5.2
Z11-0121016-2.0	Z11-2.0-12			2			3.7	4.8					
Z11-0121016-2.3	Z11-2.3-12			2.3	1.4		3.6	10.4	31.9				
Z11-0151316-0.8	Z11-0.8-15			0.8	0.6				3.8				9.6
Z11-0151316-1.0	Z11-1.0-15			1	0.6		4	8.6					
Z11-0151316-1.3	Z11-1.3-15			1.3	0.8				4.45				7.8
Z11-0151316-1.6	Z11-1.6-15	1.6	1.2	4.6	7.2	31.2							
Z11-0151316-1.8	Z11-1.8-15	1.8	1.2			4.8	9.8	31.0					
Z11-0151316-2.0	Z11-2.0-15	2	1.3	5.8	9.7			31.1					
Z11-0151316-2.3	Z11-2.3-15	2.3	1.4			6	9.6	30.8					
Z11-0151316-2.5	Z11-2.5-15	2.5	1.6	6.2	9			30.8					
Z11-0151316-2.8	Z11-2.8-15	2.8	1.8			6.4	8.4	65.3					
Z11-0191716-2.3	Z11-2.3-19	2.3	2	6.5	8.1			65.0					
Z11-0191716-2.8	Z11-2.8-19	2.8	1.2			6.6	8	64.3					
Z11-0191716-3.0	Z11-3.0-19	3	1.4	6.8	8			64.3					
Z11-0191716-3.3	Z11-3.3-19	3.3	1.6			6.8	8.1	63.5					
Z11-0191716-3.8	Z11-3.8-19	3.8	1.8	16°	75°			1.5	2	62.5			
Z11-0191716-4.2	Z11-4.2-19	4.2	2			6.5	8.4			62.0			
Z11-0191716-4.7	Z11-4.7-19	4.7	2	6.6	8.1	60.7							
Z11-0191716-5.2	Z11-5.2-19	5.2	2	6.8	8	59.3							
Z11-0191716-5.7	Z11-5.7-19	5.7	2	6.8	8	2	59.3						
Z11-0211716-5.2	Z11-5.2-21	21	17	2	2.5	16°	75°	1.5	2.5	75.5			
Z11-0211716-5.7	Z11-5.7-21									5.7	6.8	8	74.3

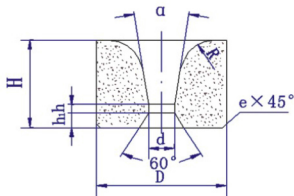
Note: The dimensions with a mark * are referential dimensions

Type Z11 Cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals (improved)

Type	Basic dimensions			Referential dimensions								approximate weight(g)				
	D	H	d	h	h ₁	h ₂	R	α	β	e	x*	Zk30				
Z11-0110813-1.3	11	8	1.3	1	1	2	4.5	13°	75°	1	1.5	8.8				
Z11-0110813-1.1			1.1	1			4.5					8.8				
Z11-0110813-0.9			0.9	0.7			5					8.9				
Z11-0110813-0.7			0.7	0.5			5.2					8.9				
Z11-0110813-0.4	11	8	0.4	0.4	1	2	5.3	13°	75°	1	1.5	8.9				
Z11-0120814-2.0	12		2	1.3			3.7	14°				10.8				
Z11-0120814-1.8			1.8	1.3			3.7					10.8				
Z11-0120814-1.6			1.6	1.2			3.8					10.8				
Z11-0151212-1.6	15	12	1.6	1.3	1.8	3.4	6.3	12°	75°	1.2	1.7	26.7				
Z11-0151212-1.4			1.4	1.1		3.3	6.7				1.5	26.8				
Z11-0151212-1.2			1.2	1		3.3	6.8				1.6	26.8				
Z11-0151212-1.0			1	1		3.2	7				1.8	27.0				
Z11-0151212-0.8			0.8	0.8		3.2	7.2				1.7	27.0				
Z11-0151214-2.3			2.3	1.6		3.5	5.9				14°	1.7	26.1			
Z11-0151214-2.0			2	1.5		3.4	6.1					1.6	26.4			
Z11-0151214-1.8			1.8	1.4		3.4	6.4					1.7	26.6			
Z11-0151214-3.9			3.9	2		4	5.1					1.6	26.6			
Z11-0151214-3.6			3.6	1.9		3.8	5.5						26.3			
Z11-0151214-3.3			3.3	1.8		3.6	5.9						26.8			
Z11-0151214-3.0			3	1.8		3.6	5.8						27.1			
Z11-0151214-2.8			15	12		2.8	1.8					1.8	3.5	7	1.2	1.6
Z11-0151214-2.6						2.6	1.8				3.5		5.9	1.7		27.6
Z11-0181514-3.8	18	15	3.8	2.6	2	4.8	5.9	14°	75°	1.2	2.2	48.6				
Z11-0181514-3.5			3.5	2.5		4.7	7.2					49.0				
Z11-0181514-3.3			3.3	2.5		4.7	7.2					49.3				
Z11-0181514-3.0			3	2.3		4.6	7.6					49.5				
Z11-0181514-2.8			2.8	2.3		4.5	7.7					49.8				
Z11-0181514-2.5			2.5	2		4.4	8.3					50.0				
Z11-0181514-2.3			2.3	1.8		4.4	8.6					50.0				
Z11-0181514-2.0			2	1.6		4.2	9.2					50.2				
Z11-0181514-1.8			1.8	1.8	1.5	2	4.2	9.8		14°	1.5	2.3	50.0			
Z11-0181514-1.5				1.5	1.4		4	10.2					50.2			
Z11-0181514-1.2				1.2	1.2		4	10.6					50.6			
Z11-0181516-6.2				6.2	2.7		5	7.7					2	44.0		
Z11-0181516-5.7				5.7	2.7			7.5						45.0		
Z11-0181516-5.2				5.2	2.7			45.7								
Z11-0181516-4.8			4.8	2.6	7.3	46.6										
Z11-0181516-4.5			4.5	2.5		47.0										
Z11-0181516-4.2			4.2	2.5		4.9	47.6									
Z11-0181516-4.0				4	2.5		4.8	7.2					48.1			

Type	Basic dimensions			Referential dimensions									approximate weight(g)
	D	H	d	h	h ₁	h ₂	R	α	β	e	x*	Zk30	
Z11-0191516-3.8	19	15	3.8	2.6	2	4.8	6.9	16°	75°	1.5	2	53.7	
Z11-0191516-3.5			3.5	2.5		4.7	7.2					54.0	
Z11-0191516-3.3			3.3	2.5		4.7	7.1				2.2	54.4	
Z11-0191516-3.0			3	2.3		4.6	7.6					54.5	
Z11-0191516-2.8			2.8	2.3		4.5	7.6				2.3	55.0	
Z11-0191516-2.5	19	15	2.5	2.3	2	4.4	7.7	16°	75°	1.5	2.2	55.2	
Z11-0191516-2.3			2.3	2		4.4	8.2					55.0	
Z11-0191516-2.0			2	1.8	2	4.2	8.8					55.1	
Z11-0191516-1.8			1.8	1.5	1.8	4.2	9.7				2.5	55.3	
Z11-0191516-1.5			1.5	1.4		4	10.1					55.5	
Z11-0191516-1.2			1.2	1.2		4	10.3					55.7	
Z11-0191516-6.2	19	15	6.2	2.8	2	5	7	16°	75°	1.5	2	49.2	
Z11-0191516-5.7			5.7	2.7			6.9					50.0	
Z11-0191516-5.2			5.2	2.7			6.7					51.3	
Z11-0191516-4.7			4.7	2.6		4.9	6.9					52.0	
Z11-0191516-4.2			4.2	2.5		4.9	6.9					53.0	
Z11-0211614-5.7	21	16	5.7	5.7	2.2	5.2	7.1	14°	75°	1.5	2.3	66.5	
Z11-0211614-5.2			5.2	5.2			7				2.4	68.0	
Z11-0211614-4.7			4.7	4.7			7.2					69.0	
Z11-0211614-4.2			4.2	4.2			7.3				2.5	70.0	
Z11-0211614-3.8			3.8	3.8	2	5.1	7.2					71.0	
Z11-0211614-3.3			3.3	3.3			7.6				2.6	71.6	
Z11-0211614-2.8			2.8	2.8			7.8					72.3	
Z11-0211614-2.3			2.3	2.3		5	8					72.4	
Z11-0211614-2.0			2	2			7.9				2.4	72.7	
Z11-0211614-1.8	21	16	1.8	1.8	2	5	8.2	14°	75°	1.5	2.5	73.2	
Z11-0211614-1.5			1.5	1.5			8.6					73.3	
Z11-0221818-5.7	22	18	5.7	5.7	2.5	7	5	18°	60°	1.2	2.5	91.0	
Z11-0221818-5.2			5.2	5.2								91.4	
Z11-0221818-4.7			4.7	4.7								92.5	
Z11-0221818-4.5			4.5	4.5								92.0	
Z11-0221818-3.8			3.8	3.8								94.0	

Type 13 Cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals

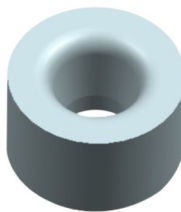
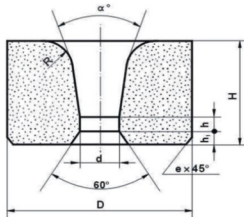


New type	Former type	Basic dimensions		Referential dimensions							approximate weight(g)
		D	H	d	h	h ₁	α	R	e	Zk30	
13-0302114-3.7	13-3.7	30	21	3.7	1.5	3	14°	5	1.2	210.0	
13-0302114-4.7	13-4.7			4.7						208.0	
13-0302114-5.7	13-5.7			5.7						205.0	
13-0302114-6.7	13-6.7	30	21	6.7	2.5	3	14°	5	1.2	203.0	
13-0302114-7.7	13-7.7			7.7						199.0	
13-0302114-8.6	13-8.6			8.6						194.0	
13-0302114-9.6	13-9.6	30	21	9.6	4	3	14°	5	1.2	189.0	
13-0402516-10.5	13-10			10.5						416.0	
13-0402516-11.5	13-11			11.5						406.0	
13-0402516-12.5	13-12	40	25	12.5	5	4	16°	5	1.5	402.0	
13-0402516-13.5	13-13			13.5						392.0	
13-0402516-14.5	13-14			14.5						383.0	
13-0402516-15.5	13-15	40	25	15.5	5.5	4.5	16°	5.5	1.5	376.0	
13-0502816-16.5	13-16			16.5						700.0	
13-0502816-17.5	13-17			17.5						672.0	
13-0502816-18.5	13-18	50	28	18.5	6	4.5	16°	5.5	1.5	693.0	
13-0502816-19.5	13-19			19.5						664.0	
13-0502816-20.5	13-20			20.5						651.0	
13-0502816-21.5	13-21	50	28	21.5	6	4.5	16°	5.5	1.5	625.0	
13-0502816-22.5	13-22			22.5						623.0	
13-0502816-23.5	13-23			23.5						598.0	
13-0502816-24.5	13-24	50	28	24.5	7	4.5	16°	5.5	1.5	580.0	
13-0603518-25.5	13-25			25.5						1138.0	
13-0603518-26.5	13-26			26.5						1107.0	
13-0603518-27.5	13-27	60	30	27.5	7.5	6	18°	6	1.5	1093.0	
13-0603518-28.5	13-28			28.5						1067.0	
13-0603518-29.5	13-29			29.5						1043.0	
13-0603518-30.5	13-30	60	30	30.5	7.5	6	18°	6	1.5	1025.0	
13-0603518-31.5	13-31			31.5						995.0	
13-0603518-32.5	13-32			32.5						963.0	
13-0603518-33.5	13-33	60	30	33.5	7.5	6	18°	6	1.5	928.0	
13-0603518-34.5	13-34			34.5						911.0	
13-0753518-35.5	13-35			35.5						1698.0	
13-0753518-36.5	13-36	75	35	36.5	8	6	18°	6	1.5	1668.0	
13-0753518-37.5	13-37			37.5						1640.0	
13-0753518-38.5	13-38			38.5						1604.0	
13-0753518-39.5	13-39	75	35	39.5	8	6	18°	6	1.5	1580.0	
13-0753518-40.5	13-40			40.5						1540.0	
13-0753518-41.5	13-41			41.5						1500.0	
13-0753518-42.5	13-42	75	35	42.5	8	6	18°	6	1.5	1470.0	
13-0753518-43.5	13-43			43.5						1437.0	

New type	Former type	Basic dimensions		Referential dimensions						approximate weight(g)	
		D	H	d	h	h ₁	α	R	e	Zk30	
13-0903520-45.0	13-45	90	35	45	9	6	20°	6	1.5	2510.0	
13-0903520-47.0	13-47			47						2415.0	
13-0903520-49.0	13-49	90	35	49	9	6				2335.0	
13-0903520-51.0	13-51			51						2265.0	
13-0903520-53.0	13-53			53						2180.0	
13-0903520-55.0	13-55			55	10	2			2100.0		
13-0903520-57.0	13-57			57					1970.0		
13-1104020-59.0	13-59			59					4025.0		
13-1104020-61.5	13-61	110	40	61.5	11				3925.0		
13-1104020-64.0	13-64			64					3747.0		
13-1104020-67.0	13-67			67					3600.0		
13-1104020-69.0	13-69			69	3450.0						
13-1405020-71.0	13-71			140	50				71	12	
13-1405020-74.0	13-74								74		
13-1405020-77.0	13-77	77									
13-1405020-81.5	13-81	81.5									
13-1405020-84.0	13-84	84									
13-0160815-5.6	LZ-01018	16.5	8.5			5.6			15°		
13-0160815-6.65	LZ-01019			6.65	24.3						
13-0160815-7.65	LZ-01020			7.65	22.3						
13-0181520-3.5	LZ-02001	18	15	3.5	20°	53.0					
13-0191720-4.3	LZ-02002	19	17	4.3		73.0					
13-0251820-6.4	LZ-02003	25	18	6.4		119.0					
13-0281820-10.0	LZ-02005			10.0	140.0						
13-0281820-8.3	LZ-02004			8.3	147.0						
13-0282018-5.2	LZ-98027	28	20	5.2	18°	172.0					
13-0282020-5.7	LZ-99100			5.7		163.5					
13-0282020-6.2	LZ-99099			6.2		164.0					
13-0282020-6.7	LZ-99098			6.7	164.0						
13-0282020-7.7	LZ-99097			7.7	160.5						
13-0282020-8.6	LZ-99096			8.6	154.0						
13-0282020-9.0	LZ-99095			9.0	152.0						
13-0282020-9.6	LZ-99094	30	21	9.6	16°	149.0					
13-0302016-11.5	LZ-87007			11.5		177.0					
13-0302116-10.0	LZ-87004			10.0		185.0					
13-0302116-10.5	LZ-87005			10.5		185.0					
13-0302116-11.0	LZ-87006			11.0	17°	180.0					
13-0302117-12.5	LZ-87010			12.5		167.5					
13-0302117-13.5	LZ-87011			13.5							
13-0302117-14.0	LZ-87012			14.0	20°	161.5					
13-0302117-14.5	LZ-87013			14.5		156.5					
13-0302120-10.1	LZ-84041			10.1							
13-0302120-6.0	LZ-84036			6.0		203.0					
13-0302120-6.7	LZ-84026			6.7		198.0					
13-0302120-7.7	LZ-84027			7.7		194.0					
13-0302120-8.6	LZ-84028			8.6		190.0					
13-0302120-9.6	LZ-84029			9.6		184.0					

New type	Former type	Basic dimensions		Referential dimensions						approximate weight(g)
		D	H	d	h	h ₁	α	R		Zk30
13-0382418-10.5	LZ-98023	38	24	10.5	9		18°			350.0
13-0382418-11.5	LZ-98024			11.5						340.0
13-0382418-12.5	LZ-98025			12.5	9		20°			334.0
13-0382420-10.5	LZ-99093			10.5						350.0
13-0382420-11.5	LZ-99092			11.5	10		350.0			
13-0382420-12.5	LZ-99091			12.5			346.0			
13-0382420-13.5	LZ-99090			13.5			332.0			
13-0382420-14.5	LZ-99089			14.5			318.0			
13-0382420-15.5	LZ-99088			15.5	308.0					
13-0472720-16.5	LZ-98028	47	27	16.5	11				580.0	
13-0472720-17.5	LZ-98029			17.5					569.0	
13-0472720-18.5	LZ-98030			18.5					559.0	
13-0472720-19.5	LZ-98031			19.5					546.0	
13-0481616-16.5	LZ-00024			16					16.5	12
13-0481716-17.5	LZ-00025	17	17.5	598.0						
13-0481816-18.5	LZ-00026	18	18.5	572.0						
13-0481916-19.5	LZ-00027	19	19.5	562.0						

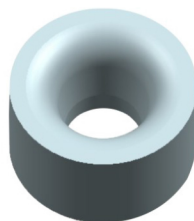
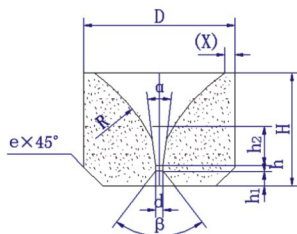
Type S13 Cemented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals



New type	Former type	Basic dimensions			Referential dimensions				approximate weight(g)
		D	H	d	h	h _i	α	R	Zk30
S13-0302118-5.7	S13-5.7	30	21	5.7	2.5	3	18°	7	202.0
S13-0302118-6.7	S13-6.7			6.7					198.0
S13-0302118-7.7	S13-7.7			7.7	3.5				195.0
S13-0302118-8.6	S13-8.6			8.6					190.0
S13-0302118-9.6	S13-9.6			9.6	4				186.5
S13-0402518-10.5	S13-10	40	25	10.5		4	406.0		
S13-0402518-11.5	S13-11	40	25	11.5	4	4	18°	7	398.0
S13-0402518-12.5	S13-12			12.5					388.0
S13-0402518-13.5	S13-13			13.5	4.5				380.0
S13-0402518-14.5	S13-14			14.5					371.0
S13-0402518-15.5	S13-15			15.5					360.0
S13-0502818-16.5	S13-16	50	28	16.5	5.5	4.5	18°	7	678.0
S13-0502818-17.5	S13-17			17.5					668.0
S13-0502818-18.5	S13-18			18.5					658.0
S13-0502818-19.5	S13-19			19.5					640.0
S13-0502818-20.5	S13-20			20.5					635.0
S13-0502818-21.5	S13-21			21.5	612.0				
S13-0502818-22.5	S13-22			22.5	597.0				
S13-0502818-23.5	S13-23			23.5	585.0				
S13-0603518-24.5	S13-24	60	35	24.5	6	5.5	20°	8	1131.0
S13-0603518-25.5	S13-25			25.5					1115.0
S13-0603518-26.5	S13-26			26.5					1094.0
S13-0603518-27.5	S13-27			27.5					1059.0
S13-0603518-28.5	S13-28			28.5					1034.0
S13-0653518-29.5	S13-29	65		29.5	5				1266.0
S13-0653518-30.5	S13-30			30.5					1237.0
S13-0653518-31.5	S13-31			31.5					1213.0
S13-0653518-32.5	S13-32			32.5					1186.0
S13-0653518-33.5	S13-33			33.5					1154.0

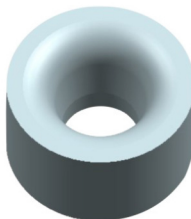
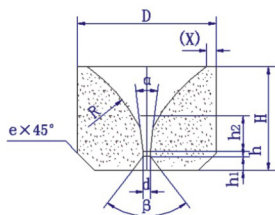
New type	Former type	Basic dimensions			Referential dimensions				approximate weight(g)	
		D	H	d	h	h ₁	α	R	Zk30	
S13-0753520-34.5	S13-34	75	35	34.5	7	5.5	20°	8	1760.0	
S13-0753520-35.5	S13-35			35.5					1750.0	
S13-0753520-36.5	S13-36			36.5					1690.0	
S13-0753520-37.5	S13-37			37.5					1670.0	
S13-0753520-38.5	S13-38			38.5					1630.0	
S13-0753520-39.5	S13-39			39.5					1610.0	
S13-0753520-40.5	S13-40			40.5					1560.0	
S13-0803520-41.5	S13-41-80	80		41.5	8	6			1860.0	
S13-0803520-42.5	S13-42-80			42.5					2135.0	
S13-0803520-43.5	S13-43-80			43.5					1830.0	
S13-0803520-44.5	S13-44-80			44.5					1800.0	
S13-0803520-45.0	S13-45-80			45					1790.0	
S13-0853520-41.5	S13-41	85		41.5					2190.0	
S13-0853520-42.5	S13-42			42.5					2130.0	
S13-0853520-43.5	S13-43			43.5					2110.0	
S13-0853520-44.5	S13-44			44.5					2130.0	
S13-0853520-45.0	S13-45			45					2030.0	
S13-0903520-47.0	S13-47-90	90		47	8.5	6			2316.0	
S13-0903520-49.0	S13-49-90			49					2240.0	
S13-0903520-51.0	S13-51-90			51					2160.0	
S13-0953520-53.0	S13-53-95	95		53					2450.0	
S13-0953520-55.0	S13-55-95			55					2363.0	
S13-0953520-57.0	S13-57-95	95	57	2295.0						
S13-1003520-47.0	S13-47	100	47	8.5					6	3110.0
S13-1003520-49.0	S13-49		49							3100.0
S13-1003520-51.0	S13-51		51							3010.0
S13-1003520-53.0	S13-53		53							2910.0
S13-1003520-55.0	S13-55		55							2860.0
S13-1003520-57.0	S13-57		57							2810.0

Type Z13 Cenmented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals



New type	Former type	Basic dimensions			Referential dimensions								approximate weight(g)
		D	H	d	h	h ₁	h ₂	R	α	β	e	x*	
Z13-0282018-3.7	Z13-3.7-28	28	20	3.7	1.6	3	6.8	10.5	18°	60°	2	3	166.4
Z13-0282018-4.7	Z13-4.7-28			4.7	1.8		7.4	10					163.4
Z13-0282018-5.2	Z13-5.2-28			5.2	2		7.2	9.6					163.0
Z13-0282018-5.7	Z13-5.7-28			5.7	2.5		7.3	8.7					161.4
Z13-0282018-6.2	Z13-6.2-28			6.2			7.35						160.5
Z13-0282018-6.7	Z13-6.7-28			6.7	2.6		7.45	8.5					159.0
Z13-0282018-7.0	Z13-7.0-28			7	2.8		7.7	7.9					158.5
Z13-0282018-7.7	Z13-7.7-28			7.7	3		7.8	7.5					156.5
Z13-0282018-8.6	Z13-8.6-28			8.6	3.2		8	7.1					153.0
Z13-0282018-9.0	Z13-9.0-28			9	3.5		8.2	6.4					151.5
Z13-0282018-9.6	Z13-9.6-28			9.6			8.4	6.2					148.5
Z13-0332318-10.5	Z13-10-33	33	23	10.5	3.7	4	8.6	8.3	4	241.5			
Z13-0332318-11.5	Z13-11-33			11.5	3.8		8.8			233.5			
Z13-0332318-12.5	Z13-12-33			12.5			9	8.5		228.0			
Z13-0382418-13.5	Z13-13-38	38	24	13.5	4		9.2	8.7		321.0			
Z13-0382418-14.5	Z13-14-38			14.5	4.2		9.4	8.6		313.0			
Z13-0382418-15.5	Z13-15-38	38	24	15.5	4.3		9.6	8.8	18°	60°	2	4	306.0

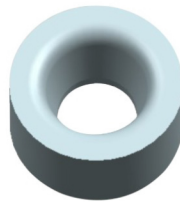
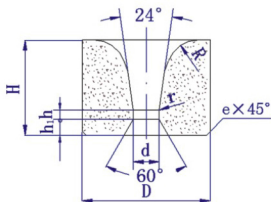
Type Z13 Cenmented carbide core blanks of drawing dies for drawing wires of ferrous and non-ferrous metals (improved)



New type	Basic dimensions			Referential dimensions									approximate weight(g)	
	D	H	d	h	h ₁	h ₂	R	α	β	e	x*	Zk30		
Z13-0241614-8.6	24	16	8.6	3	2.5	3.2	10.6	14°		1.8	3	83.4		
Z13-0241614-8.2			8.2			3	10.7					85.3		
Z13-0241614-7.7			7.7			2.9	10.5					86.3		
Z13-0241614-7.0			7.0			3	9.8					88.3		
Z13-0241614-6.5			6.5				9.8				3.2	90.1		
Z13-0241614-6.2			6.2	2	10.2	3.3	90.1							
Z13-0241614-5.7			5.7		9.8	3.2	92.1							
Z13-0241614-5.2			5.2		2.8	10	3.3				92.3			
Z13-0241614-4.7			4.7		2.6	3.5	10				3.3	93.5		
Z13-0271818-10.0	27	18	10	3.4	3	5.2	8.8	18°	60°	2	3.1	117.0		
Z13-0271818-9.6			9.6	3.2			9					119.0		
Z13-0271818-9.2			9.2				8.8					121.8		
Z13-0271818-8.6			8.6				8.6					123.0		
Z13-0271818-8.2			8.2				8.4					125.0		
Z13-0271818-7.7			7.7	3		5	8.6					127.0		
Z13-0271818-7.2			7.2				8.8					128.8		
Z13-0271818-6.7			6.7				9					130.2		
Z13-0271818-6.2			6.2			4.8	9				3.4	132.0		
Z13-0271818-5.7			5.7	2.9			9.1				3.5	133.0		
Z13-0271818-5.2			5.2	2.8			9.3					134.7		
Z13-0271818-4.7			4.7	4.7		9.2	135.3							
Z13-0342118-15	34	21	15	4.2	3.5	7.4	7.2					203.5		
Z13-0342118-14			14			7.3	7.1					210.0		
Z13-0342118-13			13			7.3	7					218.0		
Z13-0342118-12			12			7.5	6.9					224.0		

New type	Basic dimensions			Referential dimensions										approximate weight(g)
	D	H	d	h	h ₁	h ₂	R	α	β	e	x*	Zk30		
Z13-0342118-11	34	21	11	4	3.5	7.5	6.9	20°			4	230.0		
Z13-0342118-10			10		3		7.5					236.0		
Z13-0342118-9.6			9.6		7.5		238.0							
Z13-0372220-15	37	22	15	4.5	3.5	8.2	7.2				4.3	264.6		
Z13-0372220-14			14				7.2					273.5		
Z13-0372220-13			13				7.1					4.5	282.3	
Z13-0372220-12			12	4.4			7.2				4.7	290.0		
Z13-0372220-11			11				7.2				5	296.0		
Z13-0372220-10			10				7.1					302.5		
Z13-0442320-23	44	23	23	5.2	4	8.3	7.1				4.7	335.0		
Z13-0442320-22			22			8.2	7				4.8	346.0		
Z13-0442320-21			21			8	7.1				4.9	356.0		
Z13-0442320-20			20				6.9				5	369.0		
Z13-0442320-19			19	5		7	5.1				378.0			
Z13-0442320-18			18			8.1	6.9				5.2	387.0		
Z13-0442320-17			17				8.3				7	5.4	400.0	
Z13-0442320-16			16			4.7					8.3	7	5.6	409.0
Z13-0442320-15			15	9			7.1					5.8	417.0	
Z13-0442320-14			14				6				9	7.1	6	427.0
Z13-0472520-21	21	5.8	9.2	7	5.5							489.0		
Z13-0472520-20	20			9.5	7.1	5.8					488.0			
Z13-0472520-19	19		4		9.2	7					6.1	497.0		
Z13-0472520-18	18			9.4		7					6.4	512.0		
Z13-0472520-17	17	9.2			7.1	6.7					519.0			
Z13-0472520-16	16			6	9.2	7	7				532.0			
Z13-0482520-25	25	10.2	7.1			5.6	642.0							
Z13-0482520-24	24		10.1		7	5.7	656.0							
Z13-0482520-23	23				10	7.1	5.8				460.0			
Z13-0482520-22	22		20°	10.2		7	6				487.0			
Z13-0542620-28	28	10.2			7	6.2	594.0							
Z13-0542620-27	27			10.1	7	6.4	610.0							
Z13-0542620-26	26	10			7	6.6	630.0							
Z13-0542620-25	25			10	7.1	6.8	642.0							
Z13-0542620-24	24	5			10.2	8	7	658.0						
Z13-0572820-31	57		28	31		10.4	8	5.3	690.0					
Z13-0572820-30				30	8.1		5.3	710.0						
Z13-0572820-29		29		8	5.5		733.0							

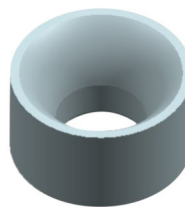
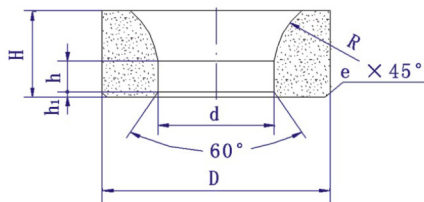
Type 22 cemented carbide core blanks of drawing dies for drawing tubes of non-ferrous metals



New type	Former type	Basic dimensions			Referential dimensions					approximate weight(g)
		D	H	d	h	h ₁	R	r	e	Zk30
22-0201324-2.8	22-2.8	20	13	2.8	1.5	3	3	1	1	57.1
22-0201324-3.8	22-3.8			3.8						56.2
22-0201324-4.7	22-4.7			4.7						55.0
22-0201324-5.7	22-5.7			5.7						53.5
22-0301824-6.7	22-6.7			6.7						171.5
22-0301824-7.6	22-7.6	30	18	7.6	2	4	4	1.5	1.2	168.0
22-0301824-8.6	22-8.6			8.6						164.5
22-0301824-9.6	22-9.6			9.6						159.5
22-0301824-10.5	22-10			10.5						149.5
22-0301824-11.5	22-11			11.5						149.5
22-0452424-12.5	22-12	45	24	12.5	3	4.5	5	1.5	1.2	493.0
22-0452424-13.5	22-13			13.5						485.0
22-0452424-14.5	22-14			14.5						475.0
22-0452424-15.5	22-15			15.5						465.0
22-0452424-16.5	22-16			16.5						455.0
22-0452424-17.5	22-17			17.5						445.0
22-0452424-18.5	22-18			18.5						433.0
22-0452424-19.5	22-19			19.5						421.0
22-0452424-20.5	22-20			20.5						410.0
22-0452424-21.5	22-21			21.5						396.0
22-0452424-22.5	22-22			22.5						381.0
22-0452424-23.5	22-23			23.5						371.0
22-0603024-24.5	22-24	60	30	24.5	3.5	5	6	2	1.5	962.0
22-0603024-25.5	22-25			25.5						946.0
22-0603024-26.5	22-26			26.5						926.0
22-0603024-27.5	22-27			27.5						907.0
22-0603024-28.5	22-28			28.5						887.0
22-0603024-29.5	22-29			29.5						869.0
22-0603024-30.5	22-30			30.5						840.0
22-0603024-31.5	22-31			31.5						818.0
22-0603024-32.5	22-32			32.5						794.0
22-0603024-33.5	22-33			33.5						774.0

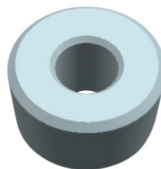
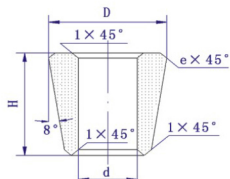
New type	Former type	Basic dimensions			Referential dimensions					approximate weight(g)		
		D	H	d	h	h _i	R	r	e	Zk30		
22-0803524-34.5	22-34	80	35	34.5	5			2	1.5	2080.0		
22-0803524-35.5	22-35			35.5						2020.0		
22-0803524-36.5	22-36			36.5						1970.0		
22-0803524-37.5	22-37			37.5						1960.0		
22-0803524-38.5	22-38			38.5						1920.0		
22-0803524-39.5	22-39			39.5						1900.0		
22-0803524-41.5	22-41			41.5						1770.0		
22-0803524-44.5	22-44			44.5						1670.0		
22-0803524-47.0	22-47			47						1595.0		
22-0904024-49.0	22-49	90	40	49	5	10				2485.0		
22-0904024-52.0	22-52	100		52						2395.0		
22-1004024-55.0	22-55			55						3110.0		
22-1004024-57.0	22-57	120	45	57	6.5			2.5	2	2990.0		
22-1204524-59.0	22-59			59						5640.0		
22-1204524-62.0	22-62			62						5370.0		
22-1204524-64.0	22-64			64						5100.0		
22-1204524-67.0	22-67			67						4730.0		
22-1305024-69.0	22-69			130						50	69	6617.0
22-1305024-72.0	22-72										72	6373.0
22-1305024-74.0	22-74										74	6176.0
22-1305024-77.0	22-77										77	5880.0
22-1405024-79.0	22-79	140	50	79	6.5	5	10	2.5	2	7274.0		
22-1405024-84.0	22-84	140		84						6765.0		
22-1405024-88.0	22-88			88						6333.0		
22-0301824-11.0	LZ-99075	30	18	11.0						154.0		
22-0301824-12.0	LZ-99076			12.0						151.5		
22-0301824-13.0	LZ-99077			13.0						144.5		
22-0301824-14.0	LZ-99078			14.0						136.0		
22-0301824-15.0	LZ-99079			15.0						131.0		
22-0301824-9.0	LZ-99073			9.0						164.0		

Type 23 cemented carbide core blanks of drawing dies for drawing tubes of non-ferrous metals



New type	Former type	Basic dimensions			Referential dimensions				approximate weight(g)
		D	H	d	h	h ₁	R	e	Zk30
23-0503224-20.0	23-20	50	32	20	12	2	30	1.5	737.0
23-0503224-22.0	23-22			22					700.0
23-0503224-24.0	23-24			24					670.0
23-0603524-26.0	23-26	60	35	26	12	2	35	1.5	1116.0
23-0603524-28.0	23-28			28					1076.0
23-0603524-30.0	23-30			30					1014.0
23-0704224-32.0	23-32	70	42	32	15	2.5		2	1753.0
23-0704224-34.0	23-34			34					1693.0
23-0704224-36.0	23-36	70	42	36	15	2.5	35	2	1725.0
23-0754224-38.0	23-38	75		38					2010.0
23-0754224-40.0	23-40			40					1940.0
23-0854524-42.0	23-42	85	45	42	15		40	2	2770.0
23-0854524-44.0	23-44			44					2800.0
23-0854524-46.0	23-46			46					2590.0
23-1005024-48.0	23-48	100	50	48	18			2.5	4375.0
23-1005024-50.0	23-50			50					4300.0
23-1005024-52.0	23-52	100	50	52	18	3	40	2.5	4090.0
23-1005024-54.0	23-54			54					4030.0
23-1105024-56.0	23-56	110		56					5170.0
23-1105024-58.0	23-58			58					5160.0
23-1105024-60.0	23-60			60					5070.0
23-1105024-62.0	23-62			62					4610.0
23-1255524-64.0	23-64	125	55	64	20				680.0
23-1255524-66.0	23-66			66					6615.0
23-1255524-68.0	23-68			68					6460.0
23-1255524-70.0	23-70			70					6310.0

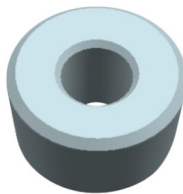
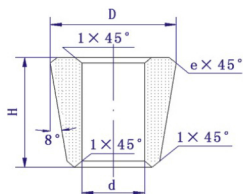
Type 30 cemented carbide core blanks of drawing dies for drawing tubes of non-ferrous metals



New type	Former type	Basic dimensions			Referential dimensions	approximate weight(g)
		D	H	d		
30-0282708-15.0	30-28	28	27	15	2	124.0
30-0292708-15.0	30-29	29.2				144.0
30-0302708-15.0	30-30	30.4				166.0
30-0312708-15.0	30-31	31.6				188.0
30-0322708-15.0	30-32	32.2				196.0
30-0332708-15.0	30-33	33.4				198.0
30-0342708-17.0	30-34	34		17		212.0
30-0352708-17.0	30-35	35.2				235.0
30-0362708-17.0	30-36	36.4				258.0
30-0372708-19.0	30-37	37		19		251.0
30-0382708-19.0	30-38	38.2				273.0
30-0392708-19.0	30-39	39.4			303.0	
30-0402708-21.0	30-40	40		21	3	289.0
30-0412708-21.0	30-41	41				316.0
30-0422708-21.0	30-42	42	342.0			
30-0432708-21.0	30-43	43	27	21	3	366.0
30-0443208-23.0	30-44	44	32	23		412.0
30-0453208-23.0	30-45	45				445.0
30-0463208-23.0	30-46	46			472.0	
30-0473208-25.0	30-47	47	32	25	4	470.0
30-0483208-25.0	30-48	48				505.0
30-0493208-25.0	30-49	49				537.0
30-0503208-25.0	30-50	50				567.0
30-0513208-25.0	30-51	51				608.0
30-0523208-25.0	30-52	52				644.0
30-0533208-25.0	30-53	53		678.0		
30-0543208-28.0	30-54	54		28		657.0
30-0553208-28.0	30-55	55				693.0
30-0563208-28.0	30-56	56				733.0
30-0573208-28.0	30-57	57		35		768.0
30-0583508-28.0	30-58	58				872.0
30-0593508-28.0	30-59	59				918.0
30-0603508-28.0	30-60	60				964.0
30-0613508-28.0	30-61	61	1010.0			
30-0623508-28.0	30-62	62	1065.0			
30-0633508-28.0	30-63	63	1110.0			
30-0643508-28.0	30-64	64	1160.0			

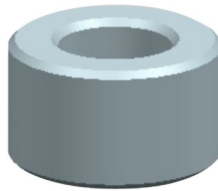
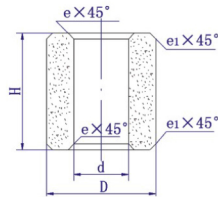
New type	Former type	Basic dimensions			approximate weight(g)
		D	H	d	Zk30
30-0151008-5.0	LT-99001	15.1	10	5.0	19.8
30-0140808-5.0	LT-99002	14	8		13.3
30-0171008-7.0	LT-99003	17.1	10	7.0	24.3
30-0191008-8.0	LT-99004	19.1		8.0	30.0
30-0211008-8.0	LT-99005	21.1		8.0	39.6
30-0231208-12.0	LT-99006	23.1	12	12.0	47.0
30-0251208-14.0	LT-99007	25.1		14.0	52.0
30-0261208-14.0	LT-99008	26.1		14.0	58.5
30-0271308-14.0	LT-99009	27.1	13	14.0	71.5
30-0141008-5.0	LT-99010	14	10	5.0	16.5
30-0151008-5.0	LT-99011	15			19.6
30-0161008-7.0	LT-99012	16		7.0	20.4
30-0171008-7.0	LT-99013	17			23.2
30-0181208-8.0	LT-99014	18	12	8.0	30.4
30-0191208-8.0	LT-99015	19			35.1
30-0201308-10.0	LT-99016	20	13	10.0	37.5
30-0211308-10.0	LT-99017	21			43.0
30-0221308-10.0	LT-99018	22			49.5
30-0231208-12.0	LT-99019	23	12	12.0	45.5
30-0241408-12.0	LT-99020	24	14		58.3
30-0251708-14.0	LT-99021	25	17	14.0	65.2
30-0261708-14.0	LT-99022	26			75.2
30-0271708-14.0	LT-99023	27			85.6
30-0282108-12.0	LT-99024	28	21	12.0	116.5
30-0292108-12.0	LT-99025	29			130.5
30-0302108-12.0	LT-99026	30.4			156.0
30-0312108-14.0	LT-99027	31.6		14.0	160.0
30-0322108-14.0	LT-99028	32.2	24		185.0
30-0332108-14.0	LT-99029	33.4			209.0
30-0271708-12.0	LT-99030	27	17	12.0	96.0
30-0261708-12.0	LT-99031	26			85.2
30-0251708-10.0	LT-99032	25		10.0	84.2
30-0241408-10.0	LT-99033	24	14		64.5
30-0231208-10.0	LT-99034	23	12		50.5

Type 30 cemented carbide core rod blanks of drawing dies for drawing tubes (improved)



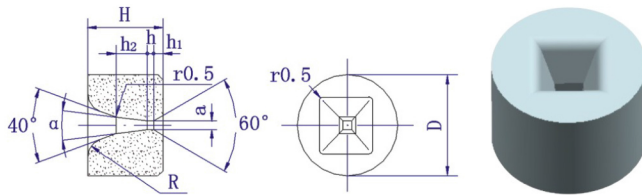
New type	Former type	Basic dimensions			Referential dimensions	approximate weight(g)
		D	H	d		
30-0312008-14.0	30-31A	31.5	20	14	2	155.5
30-0322008-14.0	30-32A	32.5				169.0
30-0332008-14.0	30-33A	33.5				182.5
30-0342008-14.0	30-34A	34.5		15		198.0
30-0352008-15.0	30-35A	35.2				199.0
30-0362008-15.0	30-36A	36.2	21	17		216.0
30-0372108-17.0	30-37A	37.2				225.0
30-0382108-17.0	30-38A	38.2				244.0
30-0392108-17.0	30-39A	39.2		18		262.0
30-0402108-18.0	30-40A	40.2				269.0
30-0412208-18.0	30-41A	41.2	22	18	3	300.0
30-0422208-18.0	30-42A	42.2				324.0
30-0432208-18.0	30-43A	43.3				345.0
30-0442508-20.0	30-44A	44.3	25	20		386.0
30-0452508-20.0	30-45A	45.3				410.0
30-0462508-20.0	30-46A	46.3		22		436.0
30-0472508-22.0	30-47A	47.3				432.0
30-0482508-22.0	30-48A	48.3				460.0
30-0492508-22.0	30-49A	49.3	25	22		484.0
30-0502508-22.0	30-50A	50.3			3	515.0
30-0512708-25.0	30-51A	51	27	25	4	525.0
30-0522708-25.0	30-52A	52				557.0
30-0532708-25.0	30-53A	53				588.0
30-0542708-28.0	30-54A	54		28		568.0
30-0552708-28.0	30-55A	55				600.0
30-0562708-28.0	30-56A	56	636.0			
30-0572708-28.0	30-57A	57	30	667.0		
30-0583008-28.0	30-58A	58		761.0		
30-0593008-28.0	30-59A	59		795.0		
30-0603008-28.0	30-60A	60		831.0		
30-0613008-28.0	30-61A	61		872.0		
30-0623008-28.0	30-62A	62	30	910.0		
30-0633008-28.0	30-63A	63		950.0		
30-0643008-28.0	30-64A	64		995.0		

Type 31 cemented carbide core rod blanks of drawing dies for drawing tubes



New type	Former type	Basic dimensions			Referential dimensions		approximate weight(g)		
		D	H	d	e ₁	e			
31-0142500-7.0	31-14	14	25	7	1	0.5	44.0		
31-0152500-7.0	31-15	15					52.0		
31-0162500-7.0	31-16	16		62.0					
31-0172500-8.0	31-17	17		67.2					
31-0182500-8.0	31-18	18		77.0					
31-0193000-10.0	31-19	19	30	10	1	0.5	93.0		
31-0203000-10.0	31-20	20					106.0		
31-0213000-10.0	31-21	21	30	10			1	0.5	122.0
31-0223000-10.0	31-22	22							136.5
31-0233000-12.0	31-23	23		12					137.0
31-0243000-12.0	31-24	24			154.0				
31-0253000-12.0	31-25	25			168.5				
31-0263000-12.0	31-26	26	16	2	0.5	188.0			
31-0273000-12.0	31-27	27				207.0			
31-0283500-16.0	31-28	28				220.0			
31-0293500-16.0	31-29	29				242.0			
31-0303500-16.0	31-30	30				265.0			
31-0313500-16.0	31-31	31	35			2	0.5	284.0	
31-0323500-16.0	31-32	32						315.0	
31-0333500-20.0	31-33	33						20	281.0
31-0343500-20.0	31-34	34							305.0
31-0353500-20.0	31-35	35							337.0
31-0363500-20.0	31-36	36	365.0						
31-0373500-20.0	31-37	37	398.0						
31-0383500-20.0	31-38	38	40	2	1			424.0	
31-0393500-20.0	31-39	39						460.0	
31-0403500-20.0	31-40	40						490.0	
31-0413500-20.0	31-41	41				527.0			
31-0423500-20.0	31-42	42				558.0			
31-0434000-22.0	31-43	43	45			26.4	1	637.0	
31-0444000-22.0	31-44	44						677.0	
31-0454500-26.4	31-45	45	703.0						
31-0464500-26.4	31-46	46	748.0						
31-0474500-26.4	31-47	47	790.0						

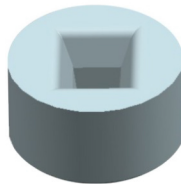
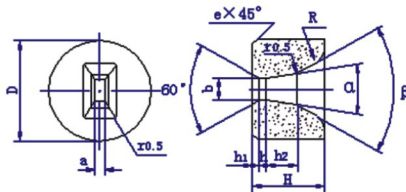
Type 40 cemented carbide core blanks of drawing dies for drawing square rods



New type	Former type	Basic dimensions		Referential dimensions							approximate weight(g)
		D	H	a	h	h ₁	h ₂	R	α	e	Zk30
40-0161214-1.8	40-1.8	16	12	1.8	1	1.5	5	1.5	14°	1	32.0
40-0161214-2.4	40-2.4			2.4							31.0
40-0221814-2.8	40-2.8	22	18	2.8	1.5	2	7	2	14°	1.2	89.0
40-0221814-3.2	40-3.2			3.2							89.0
40-0221814-3.6	40-3.6			3.6							88.0
40-0221814-4.0	40-4.0			4.0							86.0
40-0302114-4.6	40-4.6	30	21	4.6	2	2	11	3	14°	1.2	198.0
40-0302114-5.0	40-5.0			5.0							197.0
40-0302114-5.7	40-5.7			5.7							196.0
40-0302114-6.7	40-6.7			6.7							193.0
40-0352514-7.7	40-7.7	35	25	7.7	3	3	13	4	14°	1.5	312.0
40-0352414-8.7	40-8.7			8.7							306.0
40-0352414-9.7	40-9.7			9.7							298.0
40-0452514-10.7	40-10	45	25	10.7	3.5	3	13	4	14°	1.5	524.0
40-0452514-11.7	40-11			11.7							514.0
40-0452514-12.7	40-12			12.7							504.0
40-0452514-13.7	40-13			13.7							494.0
40-0452514-14.7	40-14	50	28	14.7	4	3	14	4	14°	1.5	484.0
40-0502814-15.7	40-15			15.7							674.0
40-0502814-16.7	40-16			16.7							658.0
40-0502814-17.7	40-17			17.7							644.0
40-0502814-18.7	40-18			18.7							623.0

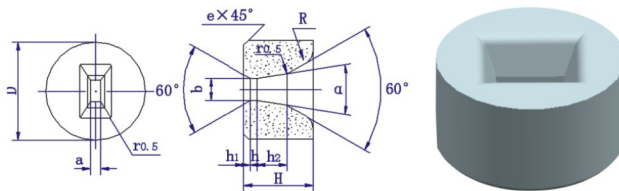
New type	Former type	Basic dimensions		Referential dimensions							approximate weight(g)							
		D	H	a	h	h ₁	h ₂	R	α	e	Zk30							
40-0603016-19.7	40-19	60	30	19.7	5	4	14	4		1.5	1028.0							
40-0603016-20.7	40-20			20.7							1008.0							
40-0603016-21.7	40-21			21.7							998.0							
40-0603016-22.7	40-22			22.7							970.0							
40-0603016-23.7	40-23			23.7							950.0							
40-0653216-24.7	40-24	65	32	24.7	6	5	5	16°		1232.0								
40-0653216-25.5	40-25			25.5						1232.0								
40-0653216-26.5	40-26			26.5						1190.0								
40-0653216-27.5	40-27			27.5						1180.0								
40-0703516-28.5	40-28	70	35	28.5	8	6				16		2	1530.0					
40-0703516-29.5	40-29			29.5									1530.0					
40-0703516-30.5	40-30			30.5									1540.0					
40-0703516-31.5	40-31			31.5									1400.0					
40-0803516-32.5	40-32	80		32.5														2025.0
40-0803516-33.5	40-33			33.5														1983.0
40-0803516-34.5	40-34			34.5			1925.0											
40-0803516-35.5	40-35			35.5			1965.0											
40-0803516-36.5	40-36			36.5			1915.0											
40-0803516-37.5	40-37			37.5			1875.0											
40-0904020-38.5	40-38		90	40	38.5	6	20°		2800.0									
40-0904020-39.5	40-39	39.5			2735.0													
40-0904020-40.5	40-40	90	40	40.5	8	6	16	6	20°	2	2670.0							
40-0904020-41.5	40-41			41.5							2605.0							
40-1004020-42.5	40-42	100		42.5							3555.0							
40-1004020-44.5	40-44			44.5							3441.0							
40-1004020-47.5	40-47			47.5							3374.0							
40-1204520-49.5	40-49	120	45	49.5						5892.0								
40-1204520-51.5	40-51			51.5						5617.0								
40-1204520-53.5	40-53			53.5						540.0								

Type 41 cemented carbide core blanks of drawing dies for drawing square rods



New type	Former type	Basic dimensions			Referential dimensions								approximate weight(g)	
		D	H	b	a	h	h ₁	h ₂	R	α	β	e	Zk30	
41-0302114-6.7 × 4.7	41-6.7 × 4.7	30	21	6.7	4.7	2	2	11				1.2	195.0	
41-0352514-7.7 × 5.7	41-7.7 × 5.7			7.7	5.7								318.0	
41-0352514-7.7 × 6.7	41-7.7 × 6.7			7.7	6.7								317.0	
41-0352514-8.7 × 2.7	41-8.7 × 2.7			8.7	2.7								323.0	
41-0352514-9.7 × 3.7	41-9.7 × 3.7			9.7	3.7	3			3				320.0	
41-0352514-9.7 × 5.7	41-9.7 × 5.7			9.7	5.7			13					312.0	
41-0352514-9.7 × 6.7	41-9.7 × 6.7				6.7								309.0	
41-0352514-9.7 × 7.7	41-9.7 × 7.7				7.7								305.0	
41-0452514-11 × 7.7	41-11 × 7.7			11.7	7.7	3.5							530.0	
41-0452514-11 × 9.7	41-11 × 9.7				9.7		3						520.0	
41-0502814-13 × 6.7	41-13 × 6.7			13.7	6.7								740.0	
41-0502814-13 × 8.7	41-13 × 8.7				8.7					14°	40°	1.5	730.0	
41-0502814-15 × 7.7	41-15 × 7.7				7.7								730.0	
41-0502814-15 × 9.7	41-15 × 9.7				9.7								715.0	
41-0502814-15 × 11	41-15 × 11				11.7								695.0	
41-0502814-15 × 12	41-15 × 12				12.7								685.0	
41-0502814-17 × 10	41-17 × 10			17.6	10.7			14					690.0	
41-0502814-17 × 15	41-17 × 15				15.7								650.0	
41-0603014-19 × 7.7	41-19 × 7.7				7.7								1140.0	
41-0603015-19 × 9.7	41-19 × 9.7				9.7								1125.0	
41-0603016-19 × 11	41-19 × 11			19.6	11.7	5	4						1105.0	
41-0603017-19 × 14	41-19 × 14				14.7								1170.0	
41-0603018-21 × 9.2	41-21 × 9.2			21.6	9.2								1115.0	
41-0603019-21 × 11	41-21 × 11				11.7								1080.0	
41-0603020-21 × 14	41-21 × 14				14.2								1060.0	
41-0603021-23 × 11	41-23 × 11				11.7					14°	40°	1.5	1075.0	
41-0603022-23 × 14	41-23 × 14			23.6	14.7								1045.0	

Type 42 cemented carbide core blanks of drawing dies for drawing square rods

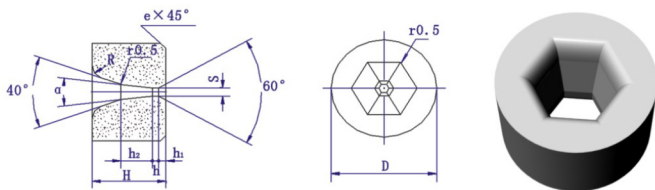


New type	Former type	Basic dimensions			Referential dimensions								approximate weight(g)	
		D	H	b	a	h	h ₁	h ₂	R	α	r	E	Zk30	
42-0201218-1.9 × 1.0	42-1.9 × 1	20	12	1.9	1.0	2.0	2.0	4			0.5	1.0	51.0	
42-0201218-1.9 × 1.4	42-1.9 × 1.4			1.4	1.4						0.6		50.0	
42-0201218-2.4 × 1.0	42-2.4 × 1			2.4	1.0						0.5		50.0	
42-0201218-2.4 × 1.4	42-2.4 × 1.4			1.4	1.4						0.6		50.0	
42-0201218-3.1 × 1.0	42-3.1 × 1			1.0	1.0						0.5		50.0	
42-0201218-3.1 × 1.4	42-3.1 × 1.4			3.1	1.4						0.6		50.0	
42-0201218-3.1 × 1.9	42-3.1 × 1.9			1.9	1.9						0.6		50.0	
42-0251518-3.9 × 1.0	42-3.9 × 1	25	15	3.9	1.0	2.5	2.5	5	3	18°	0.5	1.2	100.0	
42-0251518-3.9 × 1.5	42-3.9 × 1.5			1.5	1.5						0.6		99.0	
42-0251518-3.9 × 1.9	42-3.9 × 1.9			1.9	1.9						0.6		99.0	
42-0251518-3.9 × 2.4	42-3.9 × 2.4			2.4	2.4						0.8		98.0	
42-0251518-4.5 × 1.1	42-4.5 × 1.1			1.1	1.1						0.5		100.0	
42-0251518-4.5 × 1.5	42-4.5 × 1.5			1.5	1.5						0.6		99.0	
42-0251518-4.5 × 1.9	42-4.5 × 1.9			4.5	1.9						0.6		99.0	
42-0251518-4.5 × 2.4	42-4.5 × 2.4			2.4	2.4						0.8		98.0	
42-0251518-4.5 × 2.8	42-4.5 × 2.8			2.8	2.8						0.8		98.0	
42-0251518-5.3 × 1.1	42-5.3 × 1.1			1.1	1.1						0.5		100.0	
42-0251518-5.3 × 1.5	42-5.3 × 1.5			5.3	1.5						0.6		98.0	
42-0251518-5.3 × 1.9	42-5.3 × 1.9			1.9	1.9						0.6		97.0	
42-0251518-5.3 × 2.3	42-5.3 × 2.3			2.3	2.3						0.8		97.0	
42-0251518-5.3 × 3.1	42-5.3 × 3.1			3.1	3.1						0.8		96.0	
42-0251518-5.3 × 3.9	42-5.3 × 3.9			3.9	3.9						1.0		95.0	
42-0251518-6.2 × 1.1	42-6.2 × 1.1			1.1	1.1						0.5		98.0	
42-0251518-6.2 × 1.5	42-6.2 × 1.5			6.2	1.5						0.6		97.5	
42-0251518-6.2 × 1.9	42-6.2 × 1.9			1.9	1.9						0.6		97.0	
42-0251518-6.2 × 2.4	42-6.2 × 2.4			2.4	2.4						0.8		96.0	
42-0251518-6.2 × 3.1	42-6.2 × 3.1			3.1	3.1						0.8		95.0	
42-0251518-6.2 × 3.9	42-6.2 × 3.9			3.9	3.9						0.8		94.0	

New type	Former type	Basic dimensions			Referential dimensions								approximate weight(g)
		D	H	b	a	h	h ₁	h ₂	R	α	r	E	
42-0351818-7.2×1.1	42-7.2×1.1	35	18	7.2	1.1	2.5	2.5	6	4	18°	0.5	1.2	243.0
42-0351818-7.2×1.5	42-7.2×1.5				1.5						0.6		241.0
42-0351818-7.2×1.9	42-7.2×1.9				1.9						0.6		237.0
42-0351818-7.2×2.4	42-7.2×2.4				2.4						0.8		236.0
42-0351818-7.2×3.1	42-7.2×3.1				3.1						0.8		233.0
42-0351818-7.2×3.9	42-7.2×3.9				3.9						1.0		232.0
42-0351818-7.2×4.9	42-7.2×4.9				4.9						1.0		228.0
42-0351818-8.4×1.2	42-8.4×1.2			8.4	1.2						0.5		236.0
42-0351818-8.4×1.5	42-8.4×1.5				1.5						0.6		234.0
42-0351818-8.4×1.9	42-8.4×1.9				1.9						0.6		232.0
42-0351818-8.4×2.4	42-8.4×2.4				2.4						0.8		236.0
42-0351818-8.4×3.1	42-8.4×3.1				3.1						0.8		232.0
42-0351818-8.4×3.9	42-8.4×3.9				3.9						1.0		228.0
42-0351818-8.4×4.9	42-8.4×4.9				4.9						1.0		228.0
42-0351818-9.1×1.0	42-9.1×1.0			9.1	1.0						0.5		236.0
42-0351818-9.1×1.7	42-9.1×1.7				1.7						0.6		232.0
42-0351818-9.1×2.0	42-9.1×2.0				2.0						0.6		232.0
42-0351818-9.1×2.4	42-9.1×2.4				2.4						0.8		231.0
42-0351818-9.1×3.0	42-9.1×3.0				3.0						0.8		230.0
42-0351818-9.1×3.8	42-9.1×3.8				3.8						1.0		230.0
42-0351818-9.1×4.9	42-9.1×4.9				4.9						1.0		227.0
42-0351818-9.8×1.2	42-9.8×1.2			9.8	1.2						0.5		234.0
42-0351818-9.8×1.8	42-9.8×1.8				1.8						0.6		230.0
42-0351818-9.8×2.3	42-9.8×2.3				2.3						0.8		228.0
42-0351818-9.8×3.1	42-9.8×3.1				3.1						0.8		227.0
42-0351818-9.8×4.9	42-9.8×4.9				4.9						1.0		224.0
42-0351818-9.8×6.3	42-9.8×6.3				6.3						1.2		220.0
42-0351818-10×1.0	42-10×1.0			10.8	1.0						0.5		236.0
42-0351818-10×1.5	42-10×1.5				1.5						0.6		233.0
42-0351818-10×1.9	42-10×1.9				1.9						0.6		231.0
42-0351818-10×2.4	42-10×2.4				2.4						0.8		228.0
42-0351818-10×2.9	42-10×2.9				2.9						0.8		226.0
42-0351818-10×3.8	42-10×3.8				3.8						1.0		224.0
42-0351818-11×1.1	42-11×1.1			11.4	1.1						0.5		234.0
42-0351818-11×1.5	42-11×1.5				1.5						0.6		232.0
42-0351818-11×1.9	42-11×1.9				1.9						0.6		230.0
42-0351818-11×2.4	42-11×2.4				2.4						0.8		228.0
42-0351818-11×3.1	42-11×3.1				3.1						0.8		226.0
42-0351818-11×3.9	42-11×3.9				3.9						1.0		224.0
42-0351818-11×4.9	42-11×4.9				4.9						1.0		219.0
42-0351818-11×6.3	42-11×6.3				6.3						1.2		214.0
42-0452018-12×1.4	42-12×1.4	45	20	12.8	1.4	3.0	3.0	6	4	18°	0.6	1.5	440.0
42-0452018-12×1.9	42-12×1.9				1.9						0.6		442.0
42-0452018-12×2.6	42-12×2.6				2.6						0.8		436.0
42-0452018-12×3.4	42-12×3.4				3.4						0.8		428.0
42-0452018-12×4.1	42-12×4.1			12.8	4.1						1.0		424.0
42-0452018-12×4.9	42-12×4.9				4.9						1.0		426.0
42-0452018-12×5.9	42-12×5.9				5.9						1.0		420.0
42-0452018-14×1.6	42-14×1.6			14.6	1.6						0.6		440.0
42-0452018-14×2.1	42-14×2.1				2.1						0.6		434.0
42-0452018-14×2.8	42-14×2.8				2.8						0.8		430.0
42-0452018-14×3.4	42-14×3.4				3.4						0.8		427.0
42-0452018-14×4.1	42-14×4.1				4.1						1.0		423.0
42-0452018-14×4.9	42-14×4.9				4.9						1.0		418.0
42-0452018-14×5.9	42-14×5.9				5.9						1.0		416.0

New type	Former type	Basic dimensions			Referential dimensions									approximate weight(g)
		D	H	b	a	h	h ₁	h ₂	R	α	r	E	Zk30	
42-0502018-16×1.9	42-16×1.9	50	20	16.5	1.9	3.0	3.0	6	4	18°	1.5	0.6	544.0	
42-0502018-16×2.4	42-16×2.4				2.4							0.8	538.0	
42-0502018-16×3.1	42-16×3.1				3.1							0.8	534.0	
42-0502018-16×3.9	42-16×3.9				3.9							1.0	534.0	
42-0502018-16×4.9	42-16×4.9				4.9							1.0	538.0	
42-0502018-16×6.3	42-16×6.3				6.3							1.2	521.0	
42-0502018-17×1.0	42-17×1			17.6	1.0							0.5	548.0	
42-0502018-17×1.5	42-17×1.5				1.5							0.6	543.0	
42-0502018-17×2.1	42-17×2.1				2.1							0.6	542.0	
42-0502018-17×2.8	42-17×2.8				2.8							0.8	538.0	
42-0502018-17×3.4	42-17×3.4				3.4							0.8	533.0	
42-0502018-17×4.1	42-17×4.1				4.1							1.0	526.0	
42-0502018-17×4.9	42-17×4.9				4.9							1.0	523.0	
42-0502018-17×5.9	42-17×5.9			5.9	1.0							518.0		
42-0502018-19×1.0	42-19×1			19.2	1.0							0.5	543.0	
42-0502018-19×1.5	42-19×1.5				1.5							0.6	540.0	
42-0502018-19×2.0	42-19×2				2.0							0.6	537.0	
42-0502018-19×2.8	42-19×2.8				2.8							0.8	532.0	
42-0502018-19×3.9	42-19×3.9			19.2	3.9							1.0	530.0	
42-0502018-19×4.9	42-19×4.9				4.9							1.0	523.0	
42-0502018-19×5.9	42-19×5.9				5.9							1.0	517.0	
42-0502018-20×2.1	42-20×2.1			20.8	2.1				5	18°	1.5	0.6	536.0	
42-0502018-20×2.8	42-20×2.8				2.8							0.8	530.0	
42-0502018-20×3.4	42-20×3.4				3.4							0.8	526.0	
42-0502018-20×4.1	42-20×4.1				4.1							1.0	522.0	
42-0502018-20×4.9	42-20×4.9				4.9							1.0	516.0	
42-0502018-20×5.9	42-20×5.9				5.9							1.0	510.0	
42-0502018-23×1.0	42-23×1	50	20	23.2	1.0	3.0	3.0	6	5	18°	1.5	0.5	537.0	
42-0502018-23×1.4	42-23×1.4				1.4							0.6	536.0	
42-0502018-23×1.9	42-23×1.9				1.9							0.6	534.0	
42-0502018-23×2.4	42-23×2.4				2.4							0.8	530.0	
42-0502018-23×3.0	42-23×3.0				3.0							0.8	523.0	
42-0502018-23×3.8	42-23×3.8				3.8							1.0	518.0	
42-0502018-23×4.9	42-23×4.9				4.9							1.0	511.0	
42-0502018-23×5.9	42-23×5.9				5.9							1.0	503.0	
42-0602018-24×1.0	42-24×1	60	20	24.5	1.0	3.0	3.0	6	5	18°	1.5	0.5	790.0	
42-0602018-24×1.4	42-24×1.4				1.4							0.6	782.0	
42-0602018-24×2.6	42-24×2.6				2.6							0.8	775.0	
42-0602018-24×3.3	42-24×3.3				3.3							0.8	768.0	
42-0602018-24×3.8	42-24×3.8				3.8							1.0	765.0	
42-0602018-27×1.4	42-27×1.4			27.0	1.4							0.6	780.0	
42-0602018-27×1.9	42-27×1.9				1.9							0.6	775.0	
42-0602018-27×2.4	42-27×2.4				2.4							0.8	773.0	
42-0602018-27×3.0	42-27×3				3.0							0.8	770.0	
42-0602018-31×1.5	42-31×1.5			31.0	1.5							0.6	773.0	
42-0602018-31×3.0	42-31×3				3.0							0.8	762.0	
42-0602018-31×3.8	42-31×3.8				3.8							1.0	761.0	

Type 60 cemented carbide core blanks of drawing dies for drawing hexagonal rods



New type	Former type	Basic dimensions		Referential dimensions							approximate weight(g)				
		D	H	s	h	h ₁	h ₂	R	α	e	Zk30				
60-0302114-2.5	60-2.5	30	21	2.5	1.5	2	10	3	14°	1.2	207.0				
60-0302114-3.0	60-3			3							206.5				
60-0302114-4.0	60-4			4							205.0				
60-0302114-4.7	60-4.7			4.7	2		10.5				203.0				
60-0302114-5.7	60-5.7			5.7							199.0				
60-0302114-6.7	60-6.7			6.7							196.0				
60-0302114-7.7	60-7.7			7.7							193.0				
60-0352114-8.6	60-8.6	35	25	8.6	3	11	4			1.5	269.0				
60-0352114-9.6	60-9.6			9.6							262.0				
60-0352114-10.6	60-10			10.6							255.0				
60-0402514-11.5	60-11	40	25	11.5	3.5	3					12.5				400.0
60-0402515-12.5	60-12			12.5											393.0
60-0452514-13.5	60-13			13.5											509.0
60-0452514-14.5	60-14	45	25	14.5	4	13					4				494.0
60-0452514-15.5	60-15			15.5											490.0
60-0452514-16.5	60-16			16.5											478.0
60-0452514-17.5	60-17			17.5											469.0
60-0452514-18.5	60-18	45	25	18.5	4	3	13	4	18°	1.5	452.0				
60-0552814-19.5	60-19	55	28	19.5	5	4	14	5			810.0				
60-0552814-20.5	60-20			20.5							785.0				
60-0552814-21.5	60-21			21.5							775.0				
60-0552814-22.5	60-22			22.5							765.0				
60-0552814-23.5	60-23			23.5							742.0				

New type	Former type	Basic dimensions		Referential dimensions							approximate weight(g)								
		D	H	s	h	h ₁	h ₂	R	α	e	Zk30								
60-0653016-24.5	60-24	65	30	24.5	6	4.5	14	5	16°	1.5	1270.0								
60-0653016-25.5	60-25			25.5							1240.0								
60-0653016-26.5	60-26			26.5							1180.0								
60-0653016-27.5	60-27			27.5							1140.0								
60-0653016-28.5	60-28			28.5							1100.0								
60-0753516-29.5	60-29	75	35	29.5	7	5	15	6		16°	2	1835.0							
60-0753516-30.5	60-30			30.5								1785.0							
60-0753516-31.3	60-31			31.3								1800.0							
60-0753516-32.3	60-32			32.3								1795.0							
60-0753516-33.3	60-33			33.3								1728.0							
60-0753516-34.3	60-34			34.3					1710.0										
60-0753516-35.3	60-35			35.3					1680.0										
60-0753516-36.3	60-36			90					35			36.3	7	5	15	6	16°	2	1660.0
60-0753516-37.3	60-37	37.3	1630.0																
60-0903516-38.3	60-38	38.3	2580.0																
60-0903516-39.3	60-39	39.3	2530.0																
60-0903516-40.0	60-40	40	2490.0																
60-0903516-41.0	60-41	41	2470.0																
60-0903516-42.0	60-42	42	2420.0																
60-0903516-44.0	60-44	44	2330.0																
60-0903516-47.0	60-47	47	2230.0																
60-0903516-49.0	60-49	49	2186.0																
60-1004016-52.0	60-52	100	40		52	8	6	16		6	16°	2							3160.0
60-1004016-54.0	60-54				54														3078.0
60-1004016-57.5	60-57			57.5	2960.0														
60-1204216-59.5	60-59	120	42	59.5	8				6				16	6	16°	2	5190.0		
60-1204216-61.5	60-61			61.5													4950.0		
60-1204216-64.5	60-64			64.5													4755.0		
60-1204216-67.5	60-67			67.5													4520.0		
60-1204216-70.5	60-70			70.5													4500.0		
60-1204216-74.5	60-74			74.5													3960.0		

Technical requirements of products tolerance

allowed maximal deviation of the inside diameter for round hole drawing dies.

Unit: millimeter (mm)

inside diameter	maximal deviation		inside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≤1	0 -0.10	0 -0.08	>16 ~ 24	0 -0.50	0 -0.30
> 1 ~ 2	0 -0.15	0 -0.10	> 24 ~ 32	0 -0.60	0 -0.50
> 2 ~ 4	0 -0.20	0 -0.12	> 32 ~ 40	0 -0.70	0 -0.60
> 4 ~ 6	0 -0.25	0 -0.15	> 40 ~ 50	0 -0.90	0 -0.75
> 6 ~ 12	0 -0.35	0 -0.20	> 50 ~ 70	0 -1.00	0 -0.90
> 12 ~ 16	0 -0.40	0 -0.25	> 70 ~ 90	0 -1.10	0 -1.00

allowed maximal deviation of the outside diameter for round hole drawing dies.

Unit: millimeter (mm)

outside diameter	maximal deviation		outside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≤10	+0.40 0	+0.20 0	>35 ~ 40	± 0.50	± 0.30
> 10 ~ 16	+0.50 0	+0.30 0	> 40 ~ 45	± 0.55	± 0.35
> 16 ~ 30	+0.60 0	+0.40 0	> 45 ~ 50	± 0.60	± 0.40
> 30 ~ 35	± 0.40	± 0.25	> 50	± 1.2% D	± 1.0% D

allowed maximal deviation of the height for round hole drawing dies.

Unit: millimeter (mm)

height	maximal deviation		height	maximal deviation	
	normal class	higher class		normal class	higher class
≤10	± 0.20	± 0.10	>30 ~ 50	± 0.50	± 0.40
> 10 ~ 20	± 0.30	± 0.20	> 50 ~ 60	± 0.70	± 0.55
> 20 ~ 30	± 0.40	± 0.30	—	—	—

Type (40\41\42\60)

allowed maximal deviation of the inside hole dimensions for multilateral hole drawing dies. Unit: millimeter (mm)

inside diameter	maximal deviation		inside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≤2	0 -0.25	0 -0.15	>20 ~ 25	0 -0.80	0 -0.60
> 2 ~ 4	0 -0.35	0 -0.20	> 25 ~ 32	0 -0.90	0 -0.70
> 4 ~ 6	0 -0.40	0 -0.25	> 32 ~ 40	0 -1.00	0 -0.80
> 6 ~ 12	0 -0.50	0 -0.35	> 40 ~ 50	0 -1.20	0 -1.00
> 12 ~ 16	0 -0.60	0 -0.45	> 50 ~ 60	0 -1.80	0 -1.20
> 16 ~ 20	0 -0.70	0 -0.50	> 60 ~ 75	0 -2.00	0 -1.40

Type (40\41\42\60)

allowed maximal deviation of the outside hole dimensions for multilateral hole drawing dies. Unit: millimeter (mm)

outside diameter	maximal deviation		outside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≤30	±0.50	±0.20	>70 ~ 80	+1.50 -1.50	±0.80
> 30 ~ 50	±0.60	±0.40	> 80 ~ 90	+1.60 -1.50	±0.90
> 50 ~ 60	±0.80	±0.60	> 90 ~ 100	+1.80 -1.50	±1.00
> 60 ~ 70	±0.90	±0.70	> 100 ~ 130	+2.00 -1.50	±1%D

Type (40\41\42\60)

allowed maximal deviation of the height dimensions for multilateral hole drawing dies. Unit: millimeter (mm)

height	maximal deviation		height	maximal deviation	
	normal class	higher class		normal class	higher class
≤20	±0.40	±0.20	>40 ~ 50	±0.60	±0.50
> 20 ~ 30	±0.50	±0.30	> 50 ~ 60	±0.90	±0.60
> 30 ~ 40	±0.50	±0.40	—	—	—

Type (30)31)

allowed maximal deviation of the inside hole dimensions for core head type drawing dies.

Unit: millimeter (mm)

inside diameter	maximal deviation		inside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≤10	+0.70 0	+0.40 0	>20 ~ 30	+1.00 0	+0.70 0
>10 ~ 20	+0.80 0	+0.55 0	>30 ~ 40	+1.20 0	+0.80 0

Type (30)31)

allowed maximal deviation of the outside hole dimensions for core head type drawing dies.

Unit: millimeter (mm)

outside diameter	maximal deviation		outside diameter	maximal deviation	
	normal class	higher class		normal class	higher class
≥10 ~ 20	+0.60 +0.20	+0.50 +0.20	>40 ~ 50	+0.90 +0.20	+0.80 +0.20
>20 ~ 30	+0.70 +0.20	+0.60 +0.20	>50 ~ 60	+1.00 +0.20	+0.90 +0.20
>30 ~ 40	+0.80 +0.20	+0.70 +0.20	>60	+1.20 +0.20	+1.00 +0.20

Type (30)31)

allowed maximal deviation of the height dimensions for core head type drawing dies.

Unit: millimeter (mm)

height	maximal deviation		height	maximal deviation	
	normal class	higher class		normal class	higher class
≥10 ~ 20	±0.35	±0.20	>30 ~ 40	±0.55	±0.40
>20 ~ 30	±0.45	±0.30	>40 ~ 50	±0.60	±0.50

other dimensional deviation

Unit: millimeter (mm)

basic dimensions	maximal deviation	basic dimensions	maximal deviation
≥0.2 ~ 0.5	±0.10	>3.0 ~ 6.0	±0.25
>0.5 ~ 1.0	±0.15	>6.0 ~ 10	±0.35
>1 ~ 3.0	±0.20	>10 ~ 15	±0.45

allowed maxiaml deviation of the angle

Unit: millimeter (mm)

basic dimensions	maximal deviation
≤20°	±1°
>20° ~ 40°	±2°
≥40°	±3°

allowed maximal deviation of the straightness

Unit: millimeter (mm)

Axial Straightness Tolerance		Base Height (H)			
		≤ 18	> 18 ~ 30	> 30 ~ 50	> 50
Base Outer Diameter (D)	≤ 18	≤ 0.20	≤ 0.25	≤ 0.30	≤ 0.35
	> 18 ~ 40	≤ 0.15	≤ 0.20	≤ 0.25	≤ 0.30
	> 40	≤ 0.10	≤ 0.15	≤ 0.20	≤ 0.25



others

- 1 The allowed common deviations will be followed as the products tolerance,when there are no special requirements.
2. The roundness deviation of the drawing dies should be not larger 1/2 of the maximal dimensional deviation tolerance range corresponding to the outside diameter.
- 3.The taper deviation of drawing dies should be not larger 1/3 of the maximal deviation dimensional tolerance range of the relevant hight corresponding to the outside diameter,while the maximal value is 0.5mm.
4. There should be not defects on the surface of drawing dies such as the lamination,crack,insufficient pressed,oxidation,bubbling,contamination(sand hole).
- 5.No spot,hole,fragment,adhesion and vestige etc.should be permitted on the diameter finalizing section of drawing dies.
- 6.On the non-work section of drawing dies,the allowed depth of the vestige,adhesion,spot and burs is no more than 0.3mm,the allowed depth of the fragment is no more than 0.5mm,and the length × width is no more than 1mm × 0.5mm.
7. The maximal deviations or form and place tolerance of the former non-standard types of drawing dies will be followed according to the maximal deviations or form and place tolerance of drawings,when the customer has definite requirements.if not,then will be followed according to the deviations or form and place tolerance of the relevant current types of drawing dies.
8. The maximal deviations or form and place tolerance of the types Z11(improved) and Z13(improved) of drawing dies will be followed according to the maximal deviations or form and place tolerance of drawings,when the customer has definite requirements.if not,then will be followed according to the deviations or form and place tolerance of the relevant current types of drawing dies.
- 9 The concrete dimensional tolerance requirements of products could be negotiated at the time on receiving order when there are special requirement.



Changsha Maxinpath Technologies.co.,Ltd

Add: 465Kanyun Road,Changsha City,Hunan Province,China

Tel: 0086-18173100715 0086-18670051037

Email : maxinpath@163.com

Url: <https://maxinpath.com>