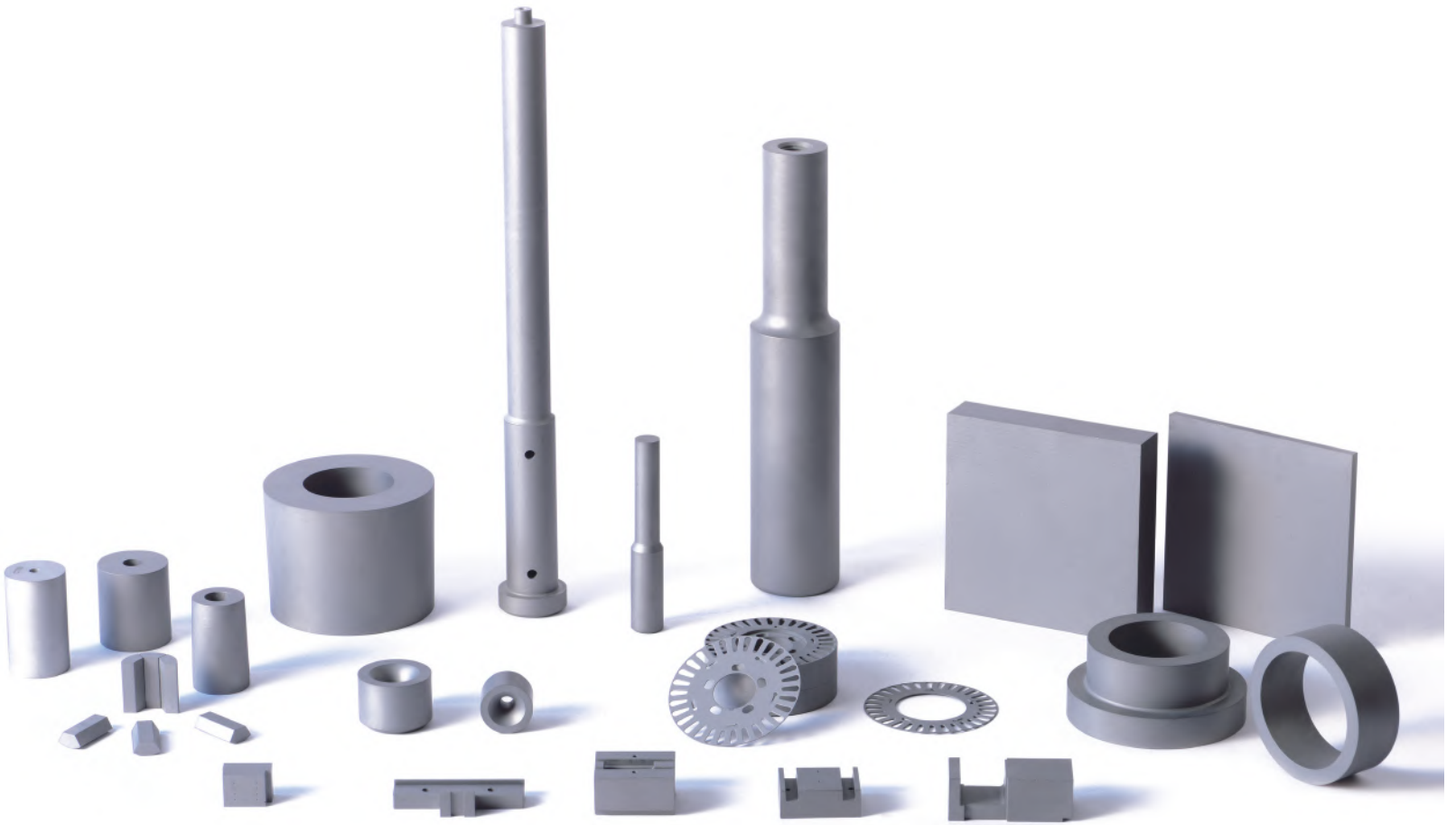




Die & Mold



CY CARBIDE MFG. CO., LTD.

About Us



CY CARBIDE MFG. CO., LTD., Established in 2003, is a professional manufacturer and exporter of high performance tungsten carbide products, RTP powders and CERMET materials. CYC delivers globally a high performance standard and special products offering, that meet the most challenging demands from industry sectors including...metalworking, mining, construction, oil & gas, die & mold, and woodworking.



CYC production sites are located in Kunshan, 50 km away from Shanghai, Changshu and Jiangxi, raw material production factory, consisting of production, laboratories and R&D facilities. There are over 40,000 square meters production areas. We have 800+ skilled staff, including tooling and grade design engineers.

CYC High performance products are guaranteed by a strong process management system, resulting in consistent quality for every batch and product. Strict control of our raw material supply chains and 100% traceability for every product batch throughout the entire manufacturing process. A philosophy of continuous improvements within every process is a core principle in our ways of working. CYC is a ISO 9001:2015(TUV) certified business.

CYC Adheres to responsible and sustainable business practices, including conflict free raw material sourcing, proactive health management for our employees, and continuous concern about the environmental impacts of our business. Our open and transparent business philosophy allows our customers, employees, and external suppliers, to have confidence in our business, ways of working, and our products.

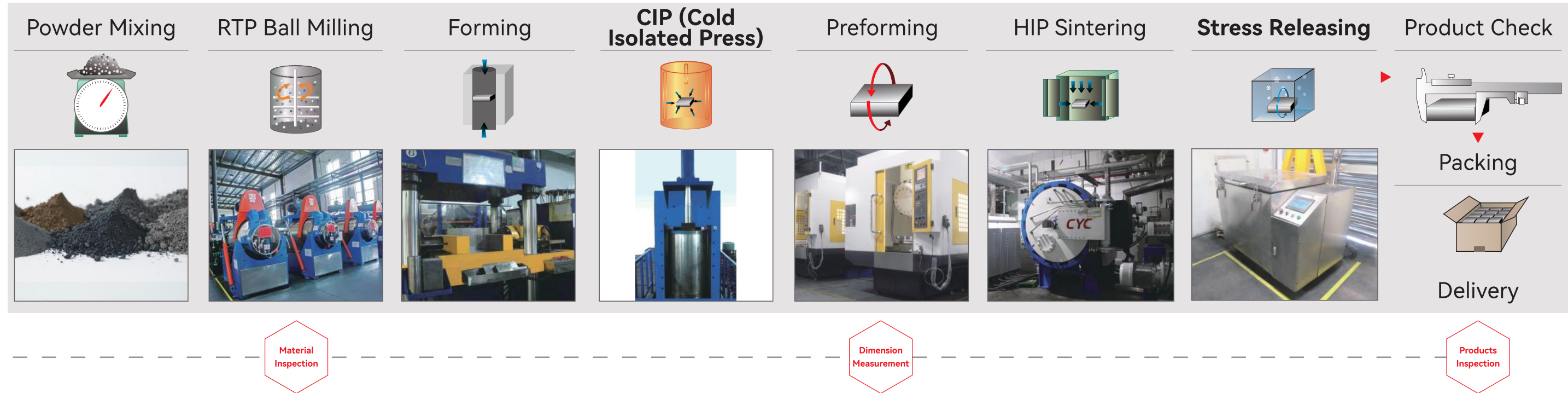
QUALITY CONSISTENCY EXPERTISE

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Manufacturing Process

Following strictly quality control throughout processing of RTP, forming, sintering, machining and delivering to make sure our commitments of uniformity and traceability to our clients.



Analysis and Test Equipment

The advanced equipment will support comprehensive inspecting and analyzing to assure high and consistent quality.



Our Capabilities

Over 20 years of experience doing R&D and manufacturing carbide, CYC has built a dedicated team consisting global experts in technical and commercial areas who always stand behind our customers.



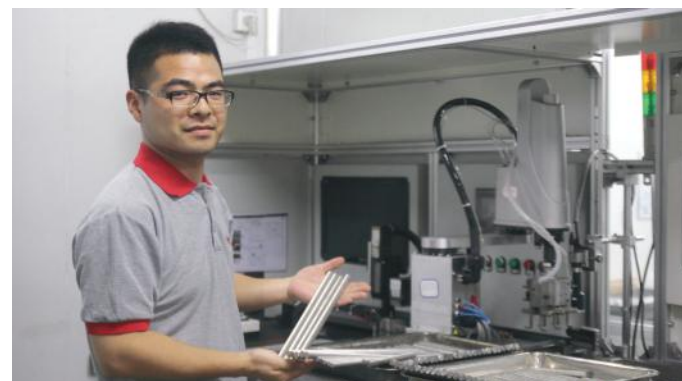
QUALITY

Carbide consistent quality has to be the top priority.



CONSISTENCY

Our manufacturing process is operating fully in compliance with ISO9001:2015 (TUV). Consistency and traceability is the promise we keep to our customers.



EXPERTISE

The mission of meeting and exceeding customer's expectations is ongoing. CYC has a wide range of capabilities to provide more high value services.

1. Grade design for specific applications
2. Geometry design for specific jobs
3. Issuing of 2D/3D drawings
4. Hard machining service includes
 - Centerless Grinding
 - Length Cutting
 - Chamfer Grinding
 - Internal Grinding
 - CNC Cylindrical Grinding
 - Plain Surface Grinding
 - Wire EDM/ Laser Marking



TIMELINESS

3-5 days for standard nibs, 7-15 days for preform blanks.

Grade Chart

Material	Grade	Co (Ni)%	Grain Size	Density (g/cm ³)	Hardness (HRA)	Toughness (GPa)	K _{IC} (MPa*m ^{1/2})
MH	MH10F	10.0	Submicron Grainsize	14.45	91.8	3.8	11.0
	MH8	8.0		14.65	92.4	3.8	9.5
CD	CD20	12.5	Fine Grainsize	14.20	90.7	3.8	12.0
	CD30	15.0		14.00	89.8	3.8	14.0
CM	CM20	6.0	Medium Grainsize	14.90	90.6	2.8	15.0
CG	CG35	9.5	Medium Grainsize	14.55	89.3	3.4	14.5
	CG50	12.0		14.20	88.2	3.5	13.5
	CG65	15.0		13.95	87.0	3.6	15.0
CT	CT55	15.0	Coarse Grainsize	13.95	86.0	2.8	22.1
	CT70	18.0		13.60	85.0	2.7	23.2
	CT80	20.0		13.45	84.0	2.6	24.0
	CT90	22.0		13.25	83.0	2.5	24.7
	CT95	25.0		13.00	82.5	2.4	25.5
SK20N	SK20N	7.5	Submicron Grainsize	14.55	92.5	2.5	9.5

• Above Data are typical parameters. Please check our material standard technical data for details.

Grade Features and Recommendation

Superfine



MH8 : Semiconductor, IC packaging, lead frame, new energy field, etc
MH10F : Semiconductor, IC packaging, lead frame, new energy field, etc

Fine



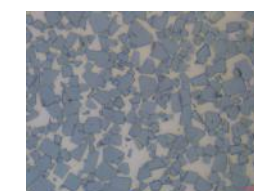
CD20 : Stamping dies for electronic connectors and terminals, motor cores, and powdering compacting dies
CD30 : Stamping dies for electronic connectors and terminals, motor cores, and powdering compacting dies

Medium



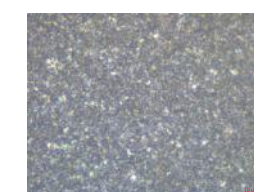
CM20 : Stamping dies
CG35 : Cold heading dies, forming dies, powder compacting dies
CG50 : Cold heading dies, forming dies, powder compacting dies
CG65 : High toughness cold forging dies, forming dies

Coarse



CT55 : Screw dies of bore size below Φ2.0, triangle male dies
CT70 : Screw dies of bore size above Φ2.0, general straight hole dies
CT80 : High impacting resistance forging dies, screw dies, nuts dies, and six segments dies
CT90 : High impacting resistance forging dies, flange dies, screw dies, serrated dies, nut dies
CT95 : High impacting resistance forging dies, counter screw dies, serrated dies, sleeves, big flange dies

Submicron

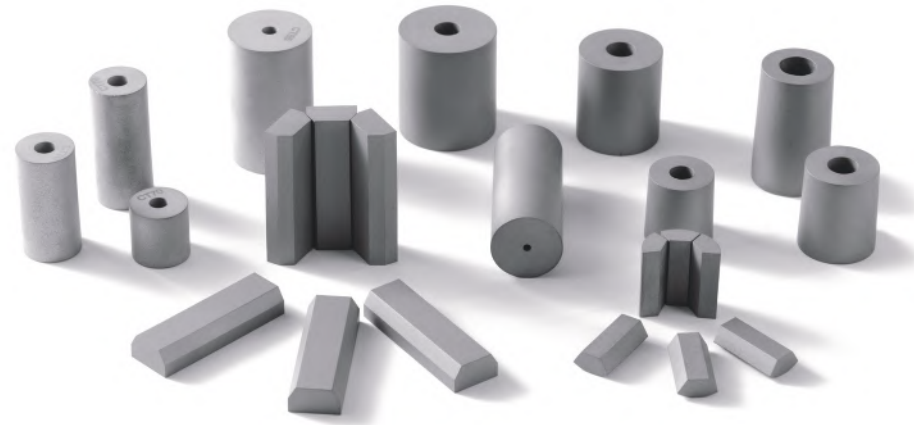


SK20N : Non-magnetic carbide

Cold Heading Screw Nibs

Available Grade

CT55/CT70/CT80/CT90/
CT95/CG35/CG50/CG65



Standard Specification

OD(mm)	L(mm)	ID(mm)
8	<20	0.8 ~ 3.0
10	<20	0.8 ~ 4.0
12	<30	0.8 ~ 5.0
13	<40	0.8 ~ 5.0
15	<40	0.8 ~ 6.0
18	<45	0.8 ~ 8.0
20	<45	0.8 ~ 10.0
22	<45	0.8 ~ 10.0
25	<45	0.8 ~ 14.0
30	<45	0.8 ~ 15.0
35	<45	0.8 ~ 20.0
40	<50	0.8 ~ 20.0
45	<50	0.8 ~ 30.0
50	<50	0.8 ~ 30.0
55	<50	0.8 ~ 30.0
60	<50	0.8 ~ 30.0
70	<50	0.8 ~ 30.0
80	<60	2.0 ~ 40.0
90	<70	2.0 ~ 50.0
100	<100	2.0 ~ 60.0
120	<100	2.0 ~ 80.0

• Size out of the chart available to customization upon request

Cold Heading Nut Nibs

Available Grade

CT55/CT70/CT80/CT90/
CT95/CG35/CG50/CG65



Standard Specification

OD(mm)	L(mm)	ID(mm)
12	<15	2.0 ~ 5.0
20	<20	3.0 ~ 6.0
30	<30	3.0 ~ 10.0
40	<40	3.0 ~ 20.0
50	<50	5.0 ~ 30.0
60	<60	5.0 ~ 35.0
70	<70	5.0 ~ 40.0
80	<80	5.0 ~ 60.0
90	<90	5.0 ~ 60.0
100	<100	5.0 ~ 60.0
110	<110	5.0 ~ 80.0
120	<120	5.0 ~ 80.0

• Size out of the chart available to customization upon request

New Grade Recommendation

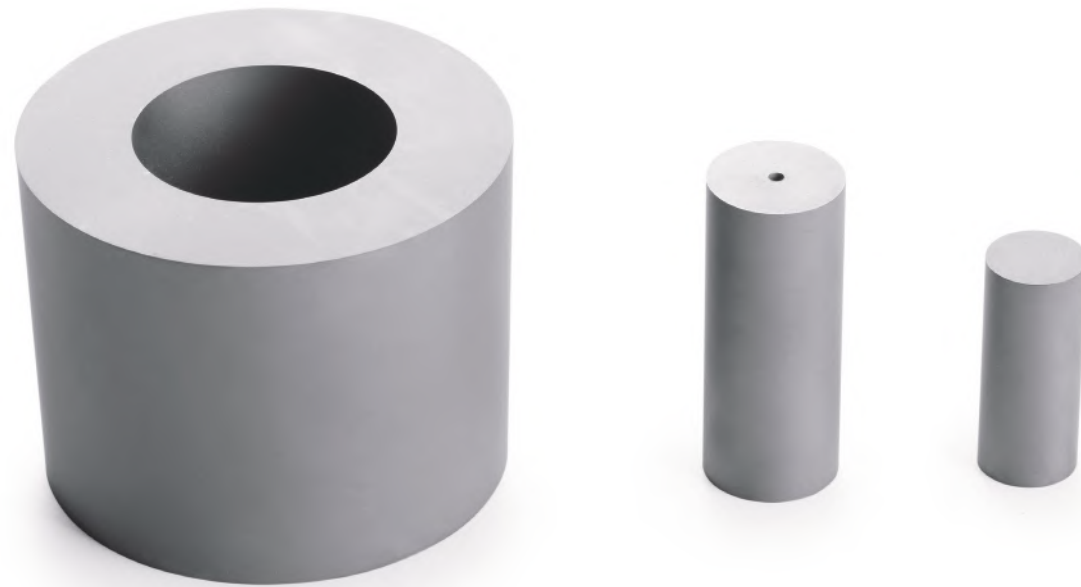
Grade	Application
CG50A	Steel ball dies, high toughness punch rods
CT80A	Stainless steel screws and nuts dies, steel ball dies in big dimensions
CT90A	High impacting resistance forging dies, counter screw dies, flange dies, serrated dies, nuts dies

• Please inquire our sales for more information

Powder Compacting Nibs

Available Grade

CG35/CG50/CG65/CD20/CD30



Standard Specification

OD(mm)	L(mm)	ID(mm)
20	<20	2.0 ~ 8.0
50	<50	2.0 ~ 30.0
100	<100	2.0 ~ 60.0
150	<150	2.0 ~ 120
200	<200	2.0 ~ 120
250	<250	2.0 ~ 160
300	<300	2.0 ~ 200

• Size out of the chart available to customization upon request

Punching Rods

RSM-Solid Rods 330L (Blanks)



Available Grade

CD30/MH10F

● In Stock ◎ Check Inventory ○ No Stock

Type:RSM Dimension:2.3~20.3 Unit:mm

Product Name	Specification	OD	L	CD30	MH10F
RSM-0220-3300UG	Φ2.3X330	2.3	330	●	●
RSM-0320-3300UG	Φ3.3X330	3.3	330	●	●
RSM-0420-3300UG	Φ4.3X330	4.3	330	●	●
RSM-0520-3300UG	Φ5.3X330	5.3	330	●	●
RSM-0620-3300UG	Φ6.3X330	6.3	330	●	●
RSM-0720-3300UG	Φ7.3X330	7.3	330	●	●
RSM-0820-3300UG	Φ8.3X330	8.3	330	●	●
RSM-0920-3300UG	Φ9.3X330	9.3	330	●	●
RSM-1020-3300UG	Φ10.3X330	10.3	330	●	●
RSM-1120-3300UG	Φ11.3X330	11.3	330	●	●
RSM-1220-3300UG	Φ12.3X330	12.3	330	◎	●
RSM-1320-3300UG	Φ13.3X330	13.3	330	◎	●
RSM-1420-3300UG	Φ14.3X330	14.3	330	◎	●
RSM-1520-3300UG	Φ15.3X330	15.3	330	◎	●
RSM-1620-3300UG	Φ16.3X330	16.3	330	◎	●
RSM-1720-3300UG	Φ17.3X330	17.3	330	○	◎
RSM-1820-3300UG	Φ18.3X330	18.3	330	○	◎
RSM-1920-3300UG	Φ19.3X330	19.3	330	○	◎
RSM-2020-3300UG	Φ20.3X330	20.3	330	○	◎

• Order according to our stock status. Non standard specification and grade available to customization upon request

EDM Blocks



Available Grade

CD30/CD20/CM20/CG50/MH10F

● In Stock ◎ Check Inventory ○ No Stock

Unit:mm

L+1.0	W+1.0	T	T+	CD30	CD20	CM20	MH10F	CG50	MH8	MH7	SK20N
125	112	1.0	0.3	●	●	●	○	○	○	○	○
125	112	1.5	0.3	●	●	●	○	○	○	○	○
125	112	2.0	0.3	●	●	●	○	○	○	○	○
125	112	2.5	0.3	●	●	●	○	○	○	○	○
125	112	3.0	0.3	●	●	●	○	○	○	○	○
125	112	3.5	0.3	●	●	●	○	○	○	○	○
125	112	4.0	0.3	●	●	●	○	○	○	○	○
125	112	4.5	0.3	●	●	●	○	○	○	○	○
125	112	5.0	0.4	●	●	●	○	○	○	○	○
125	112	5.5	0.4	●	●	●	○	○	○	○	○
125	112	6.0	0.4	●	●	●	○	○	○	○	○

EDM Blocks

L+1.0	W+1.0	T	T+	CD30	CD20	CM20	MH10F	CG50	MH8	MH7	SK20N
125	112	6.5	0.4	●	●	●	○	○	○	○	○
125	112	7.0	0.4	●	●	●	○	○	○	○	○
125	112	7.5	0.4	●	●	●	○	○	○	○	○
125	112	8.0	0.4	●	●	●	○	○	○	○	○
125	112	8.5	0.4	●	●	●	○	○	○	○	○
125	112	9.0	0.4	●	●	●	○	○	○	○	○
125	112	9.5	0.4	●	●	●	○	○	○	○	○
125	112	10.0	0.4	●	●	●	○	○	○	○	○
125	112	12.0	0.5	●	●	●	○	○	○	○	○
125	112	15.0	0.5	◎	◎	◎	○	○	○	○	○
125	112	18.0	0.5	◎	◎	◎	○	○	○	○	○
125	112	20.0	0.5	◎	◎	◎	○	○	○	○	○
125	112	22.0	0.6	○	○	○	○	○	○	○	○
125	112	25.0	0.6	◎	◎	◎	○	○	○	○	○
125	112	30.0	0.6	◎	◎	◎	○	○	○	○	○
125	112	35.0	0.6	○	○	○	○	○	○	○	○
125	112	40.0	0.6	○	○	○	○	○	○	○	○
125	112	45.0	1.0	○	○	○	○	○	○	○	○
125	112	50.0	1.0	○	○	○	○	○	○	○	○
125	112	55.0	1.0	○	○	○	○	○	○	○	○
125	112	60.0	1.0	○	○	○	○	○	○	○	○
125	112	65.0	1.0	○	○	○	○	○	○	○	○
125	112	70.0	1.0	○	○	○	○	○	○	○	○

• Order according to our stock status. Non standard specification and grade available to customization upon request

New Grade Recommendation

Grade	Application
MH10F	Applicable for copper foil, aluminum foil, electronic components stamping, IC packaging with high wear and impacting resistance
CD30	Electronic connector dies, new energy field
CG50	Motor core dies, powder compacting dies

Preform Blanks



Machining Capability

Forming

Pressing with CIP process assures density uniformity

Preforming

All geometries and profile are applicable with five-axis machining center

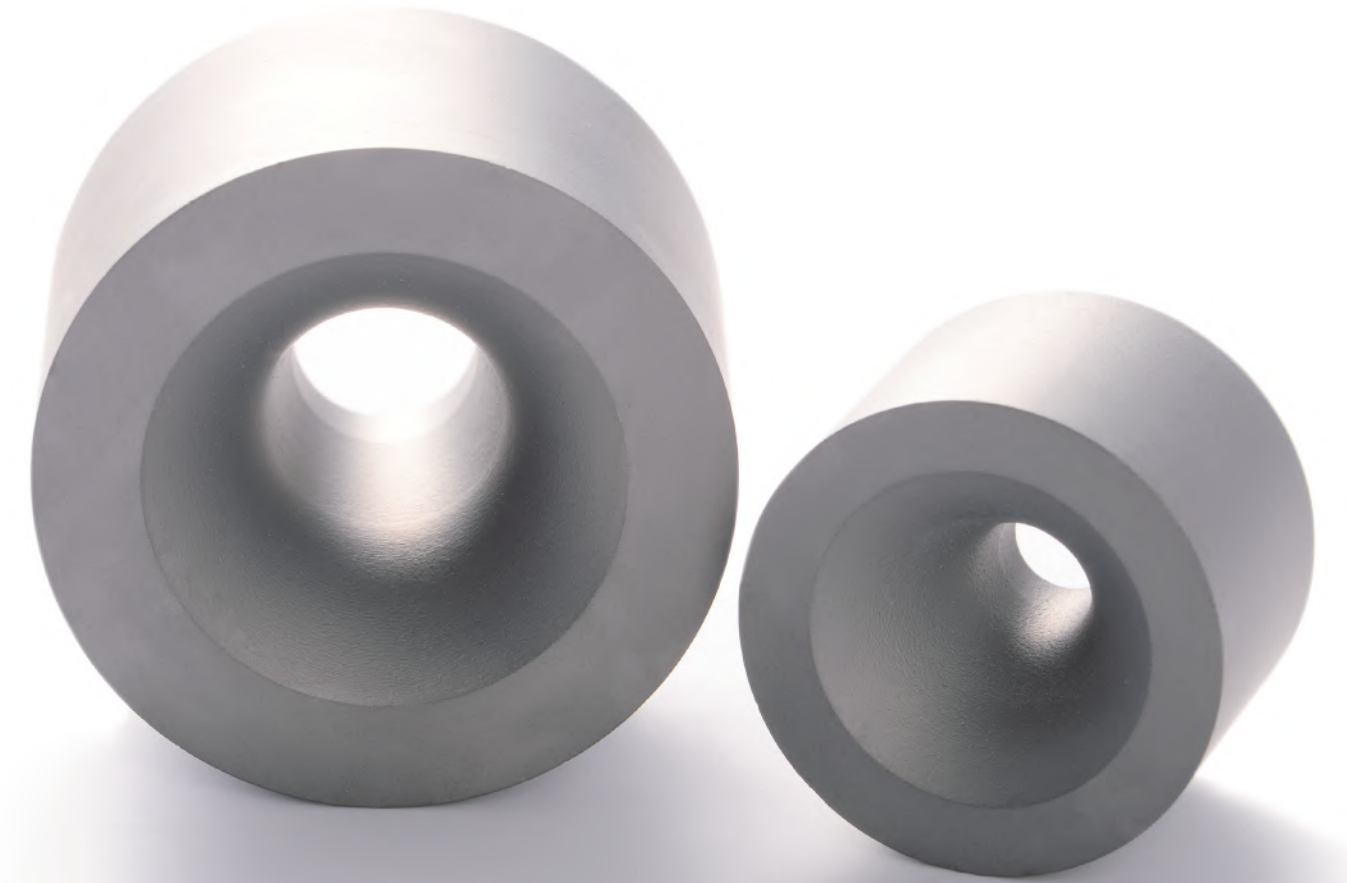
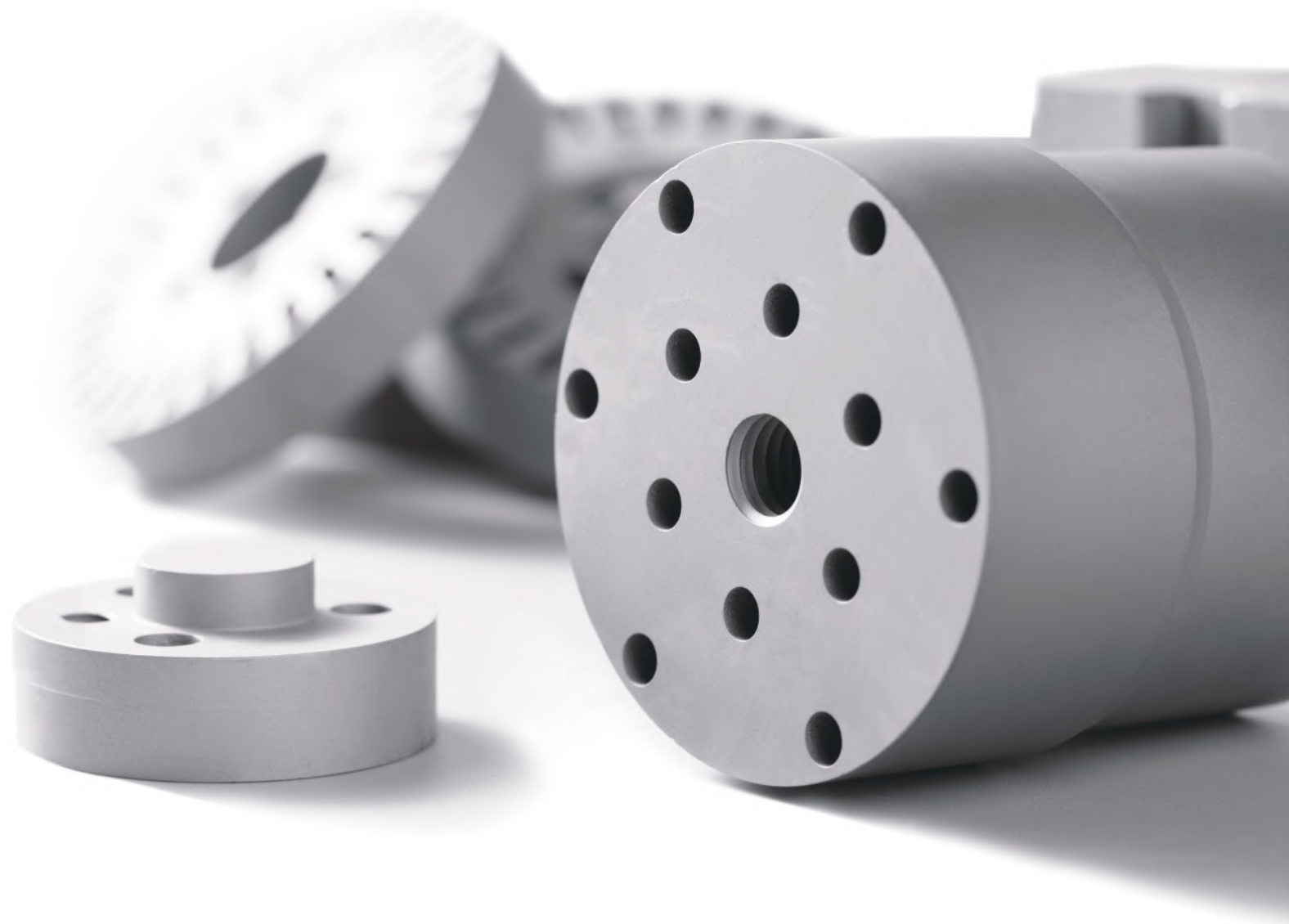
Sintering

Sintering with HIP offers higher quality stability and performance

Battery Drawing Die and Cavity Die Blanks



Motor Core Die Blanks



Drawing Die Nibs

Die Core and Accessories

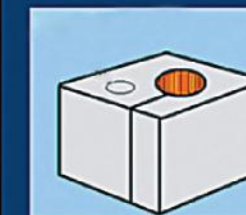
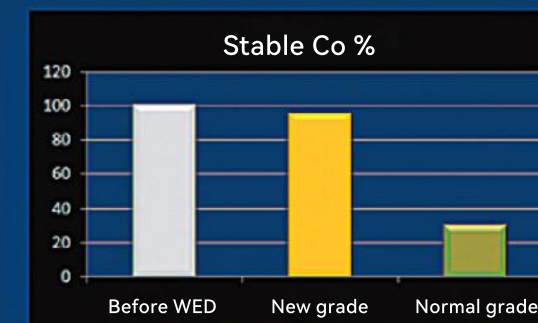


CY Carbide in Die & Mold Tools

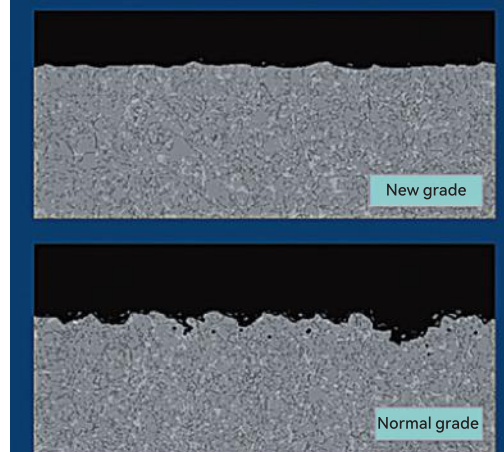
- Combined with years of experience from our technical team, CY offers a wide range of grades for die & mold tools application. These grades are all designed with latest concept from carbide die & mold tools industries and manufactured by modern machinery in order to give the carbide maximum ability of wear, impact and corrosion resistance.
- Advanced processing make the binder have a better distribution and adhesion to assure the high performance of carbide both in wear resistance and impacting strength.
- Special micron elements with the binder make the carbide have high corrosion resistance in WED or EDM processing, and lower debris.

Below is the binder cobalt dissolution and isolation during WED process

Cobalt Volume after WED processing in water

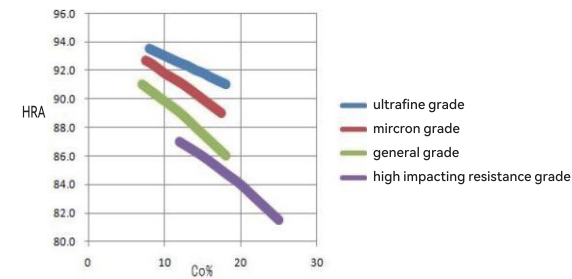


cross section



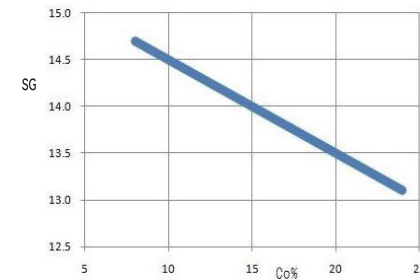
Hardness

It is one of the important physical properties when it comes to abrasive resistance. Higher Co proportion & finer grainsize the carbide is, harder it will be.



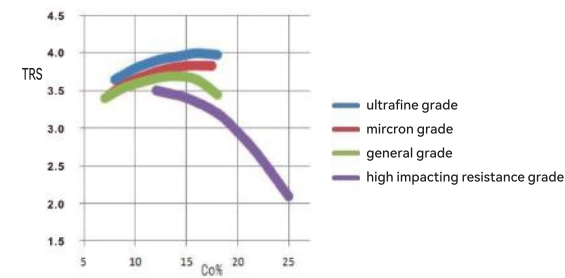
Density

Density of pure tungsten is 15.6g/cm³, pure Cobalt is 8.9g/cm³. More Cobalt content the carbide has, lower density it will be.



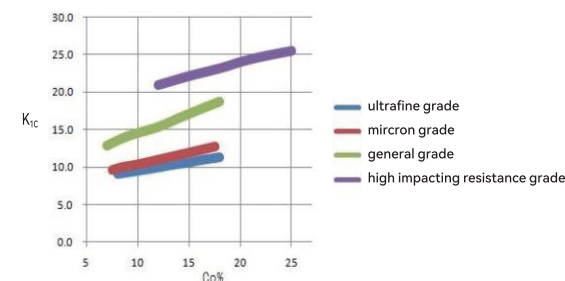
T.R.S

T.R.S values increase with increasing of binder content, and decrease with decreasing of powder grainsize.

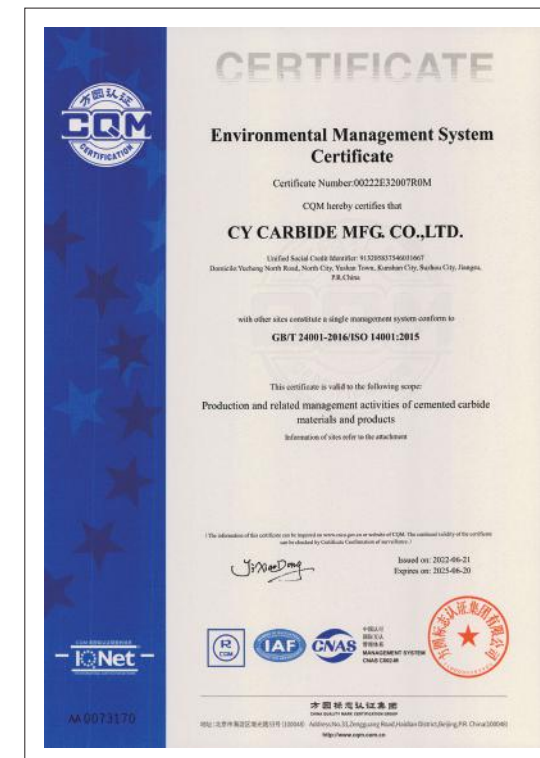


K_{1C}

K_{1C} is a property can reflect the toughness of carbide, the value increase with increasing of Cobalt & grainsize.



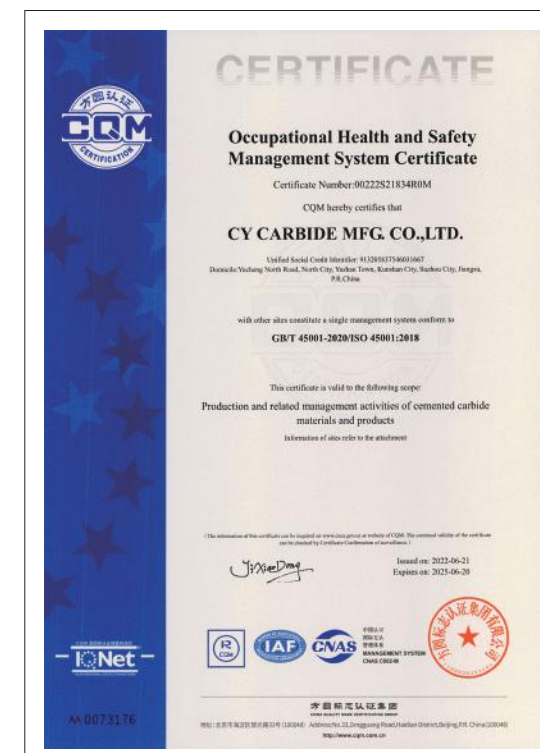
TÜV Quality System Certificate



Environmental Management System Certificate



Energy Management System Certificate



Occupational Health and Safety Management System Certificate



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