

**WELCOME TO VIEW**

**THE GRAPHITE PRODUCTS OF HORTON**

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*High Quality Products with the Best Service*

**Dalian Horton International Trading Co.,Ltd.**

9F, International Financial Tower, No.15 Renmin Road, Dalian, China

Tel: +86-411-82506195 82506197 Fax: +86-411-82336278

Website: [www.chinahorton.com](http://www.chinahorton.com)

# Catalogue

ISOSTATIC GRAPHITE

HIGH PURITY GRAPHITE

GRAPHITE EDM ELECTRODE

GRAPHITE ANODE

GRAPHITE ROTOR

GRAPHITE CRUCIBLE

GRAPHITE HEATER

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# ISOSTATIC GRAPHITE

## INTRODUCTION

Isostatic graphite is produced by isostatic compaction technology, it not only has all properties of the high purity graphite, but also good isotropism. And not to be effected by its dimension, shapes and sampling orientation, its structure is homogeneous, fine and close with high mechanical strength, strong oxidation resistance capacity and good machining property and so on.

## SUPERIORITY

1. Good electrical conductivity and high thermal conductivity.
2. Low thermal expansion resulting in high thermal shock resistance
3. Strength at high temperatures
4. Chemical inertness and non-wetting to glass and most metals
5. Self lubricity
6. Appropriate machinability



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# INDXE of ISOSTATIC GRAPHITE

Item NO.	Bulk Density ≥g/cm <sup>3</sup>	Electric Resistivity μ·Ω·m	Compressive Strength Mpa	Flexural Strength Mpa	Shore Hardness	Ash Content ppm	Average Granularity μm	Coefficient of Thermal Expansion ×10-6/°C	Young's Modulus Gpa
CDI-1A	1.85	11~13	90	40	55	500/50	25	4.8	11.5
CDI-1B	1.80	11~13	86	37	50	500/50	25	4.5	10
CDI-2S	1.70	15	55	25	50	700/50	25	3.8	9.5
CDI-3S	1.75	15	65	28	50	700/50	25	4	10.5
CDI-4S	1.80	15	80	35	50	700/50	25	4.5	11.5
CDI-5L	1.85	15	90	40	55	700/50	25	4.8	11.5
CDI-6L	1.75	15	65	28	50	700/50	25	4	10.5
CDI-7L	1.70	15	55	25	50	700/50	25	3.5	9.5
CDI-8L	1.80	15	86	35	50	700/50	25	4.5	11.5
EDM-I1	1.70	15	60	28	50	1000	22	3.2	9.5
EDM-I2	1.75	15	70	35	55	1000	22	4	10.5
EDM-I3	1.80	15	86	37	55	1000	25	4.5	11.5
EDM-I4	1.85	15	90	40	60	1000	21	5	12
EDM-I5	1.80	15	90	40	60	1000	15	5	11.5
EDM-I6	1.85	15	95	42	62	1000	15	5.2	11.5
EDM-I7	1.80	17	90	42	62	1000	8	5.2	11.5
EDM-I8	1.85	17	100	45	65	1000	8	5.5	12

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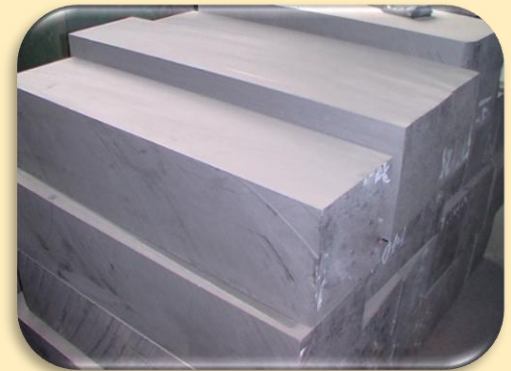
# HIGH PURITY GRAPHITE

## INTRODUCE

Graphite content of 99.9% or more of the high graphite and the high purity graphite is the ideal inorganic non-metallic crucible boat with melamine, single crystal furnace with heater, electrical discharge machining graphite, sintering moulds, anode, metal tubes with plating, semiconductor technology use graphite crucibles, launch tubes, brake flow pipe and mercury arc rectifier of graphite anode, with grid.

## ADVANTAGES

High purity graphite has resistance coefficient little, high temperature resistance, corrosion resistance, oxidation resistance, good thermal shock resistance, thermal expansion coefficient, conductive small, self-lubricating, easy to precision machining.



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## Advantages of Graphite EDM Electrode Compare to Traditional Cooper Electrode

**Lighter weight:** Density of the graphite is only 1/5 that of the copper, therefore the graphite is more suitable for the discharging of large electrode

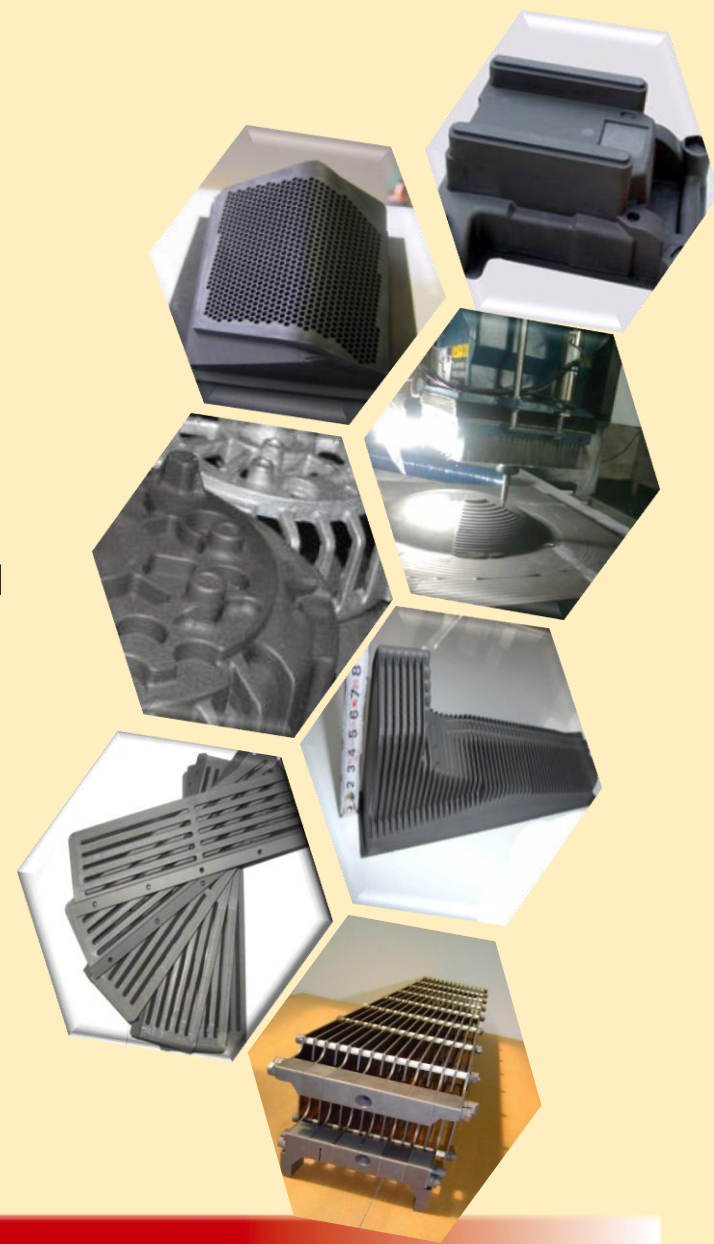
**Faster process speed:** Speed of the machinework is 2 -3 times that of the copper electrode without any burr appearing after the processing;

**Less loss:** Spark oil decomposed carbonization is covered and the compensation electrode is consumed;

**Lower material cost:** Graphite price is 50% that of the copper electrode of the same volume;

**Difficult to deform:** Compared to the copper electrode, the graphite has the melting point up to 3650°C without any deformation under high temperature, which is more suitable for processing the bone position electrode;

**High-precision:** It has no burr after the machinework and easy to polish.



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# GRAPHITE ANODE

Pre-baked anode is based on petroleum coke, tar coke for aggregates, combined with coal tar pitch. Mainly used for Aluminum electrolytic cell as anode materials. This carbon block has already roasted, also has stable geometrical shape.



**Prebaked Anode**

Item	ASH (%)	Resistivity ( $\Omega\text{mm}^2/\text{m}$ )	Coefficient of thermal expansion (%)	Reaction with $\text{Co}_2$ ( $\text{mg}/\text{cm}^2\text{-h}$ )	Bulk Density ( $\text{g}/\text{cm}^3$ )	True Density ( $\text{g}/\text{cm}^3$ )	Compressive Strength (Mpa)
TY-1	$\geq 0.5$	$\geq 55$	0.45	45	1.50	2.00	32
TY-2	$\geq 0.8$	$\geq 60$	0.50	50	1.50	2.00	30
Large pre-baked anode	1600 $\times$ 710 $\times$ 540mm, 1500 $\times$ 660 $\times$ 550mm, 1450 $\times$ 660 $\times$ 540mm						
Small and medium size pre-baked anode	1350 $\times$ 660 $\times$ 54mm, 1150 $\times$ 660 $\times$ 540mm, 1020 $\times$ 710 $\times$ 540mm, 980 $\times$ 850 $\times$ 510mm						

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## Graphite Anode Used in Alumina Electrolytic Cell



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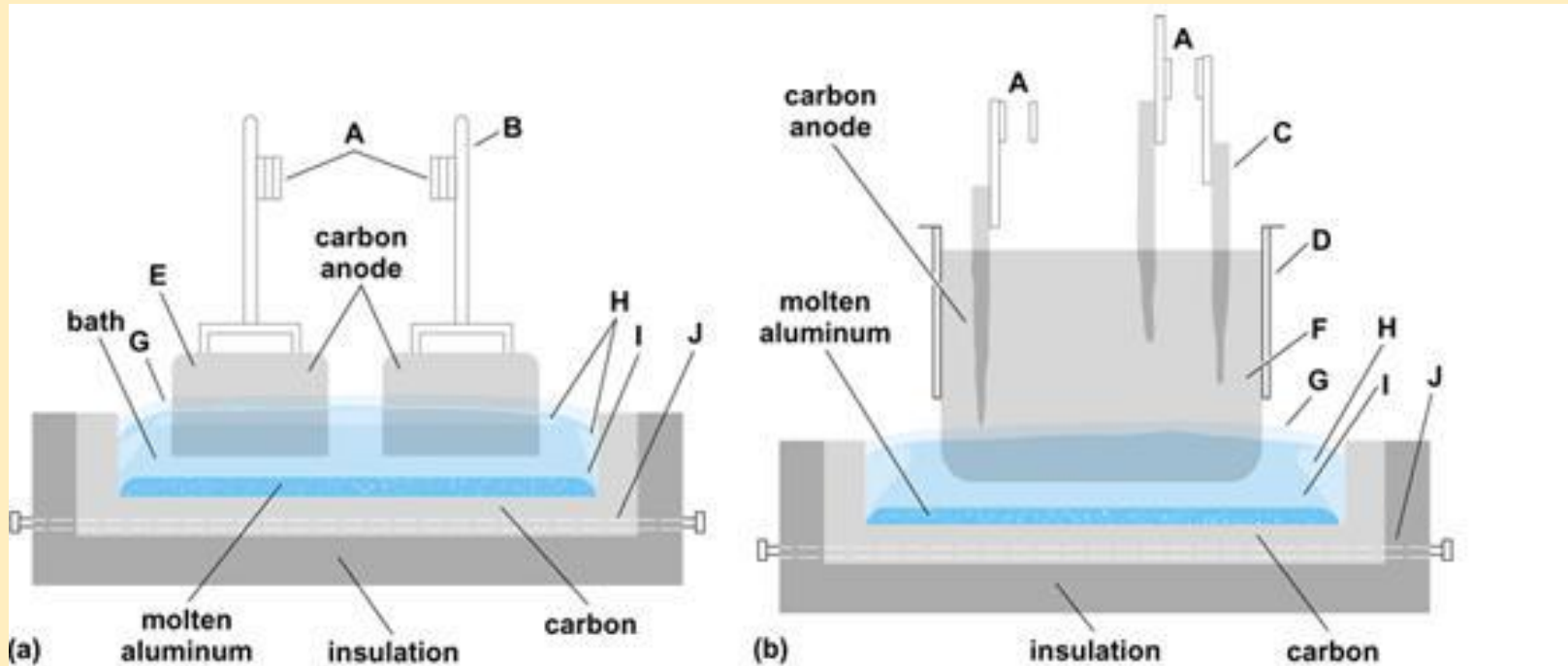
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# Electrochemical Process



(a) Utilizing Prebaked Carbon Anode (b) Utilizing Soderberg(索德伯格) Carbon Anode

A = anode bus, B = anode rod, C = anode stub, D = anode casing, E = prebaked carbon anode, F = Soderberg carbon anode baked in place, G = crust of frozen bath and alumina, H = frozen bath, I = bath (electrolyte), J = steel pin cathode collector.

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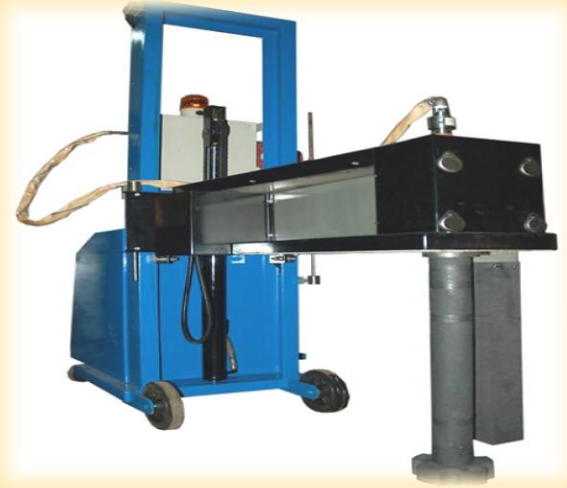
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# GRAPHITE ROTOR

## Product characteristics:

1. Circumvolve smelt dehumidification machine include removable and fixed ones and so on, which are suitable for various operating conditions.
2. The rate of gas degassing is over 50%, which could shorten the smelting time, reduce the production cost.
3. Be good for the aluminium liquids purity treatment of degasser unit, pouring ladle and static box.
4. After antioxidation upper treatment, service life is 5 times than normal product(about 2 to 6 months), the product is widely used in aluminium alloy casting industry



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**GRAPHITE CRUCIBLE** offer high performance with good technical and economic effect. They are used in metallurgy, casting, chemical and (scientific) industry in general; they are also used to produce alloy tool steel melting and non-ferrous metal and alloy melting.



Property	Unit	Value
Bulk Density	g/cm <sup>3</sup>	1.60-1.88
Bending Strength	Mpa	10-45
Compressive Strength	Mpa	17-70
Electric resistivity	μΩm	6-15
Max Grain	mm	0.2-4

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Using special graphite material, high precision CNC equipment. Then the graphite mould will have longer life spans, higher accuracy. More cost savings and better product effect.



**Graphite Mould Series**



**Graphite Crucible for Casting**



**Graphite Crucible for Metal Melting**

We have hundreds kinds of Graphite Crucibles apply for different kinds of machines. Outstanding performance of the property. Perfect production system. We would like to design any kinds of graphite crucibles for you.

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## Specifications of Clay Graphite Crucible

Item NO.	Upper OD (mm)	Bottom OD (mm)	Height (mm)
BA1500	780	450	890
BA 1250	720	470	905
BA 1200	780	450	760
BA 1100	720	480	850
BA 1000	725	470	780
BA 900	720	480	730
BA 800	710	410	680
BA 700	600	350	780
BA 650	600	330	710
BA650	650	330	650
BA593	620	330	610
BA 530	580	450	640
BA 502	530	330	720
BA 501	530	330	760
BA 443	580	330	600
BA 401	480	380	570
BA 400	530	340	680
BA 350	460	340	670
BA 333	610	340	450
BA 300	455	340	590
BA 313	530	330	530
BA 303	500	340	500
BA 253	450	340	450
BA 220	400	280	550
BA 250-1	430	300	590
BA 200	388	275	500
BA 150	365	260	460
BA 120	355	235	450
A1500	790	530	800
A1200	715	480	750
A1000	715	480	720

We would like to design any kinds of graphite crucibles as your requirement.

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## Graphite Heater

Products of carbon and graphite are widely used in industrial furnaces, mono-crystalline silicon machinery, electron, semi-conductor, metallurgy, oil, chemistry, textile, electrical machinery, electrical equipment, electrical furnace, traffic, communication industry, medicine, etc.



Technical Specification	HTN-3	HTN-4	HTN-5	HTN-6
Bulk Density(g/cm <sup>3</sup> )	≥1.72	≥1.78	≥1.85	≥1.9
Ash Content(PPM)	≤ 1000	≤1000	≤1000	≤1000
Shore Hardness	≥40	≥40	≥45	≥50
Specific Resistance (μ.Ω.m)	≤12	≤12	≤10	≤8
Flexural Strength (MPa)	≥30	≥35	≥40	≥45
Compressive Strength (MPa)	≥50	≥60	≥70	≥85
Max. Grain Size(μm)	≤43	≤43	≤43	≤43
Coefficient of Thermal Expansion Mm/° C	≤4.5*10 <sup>-6</sup>	≤4.5*10 <sup>-6</sup>	≤4.4*10 <sup>-6</sup>	≤4.4*10 <sup>-6</sup>

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**END THANKS**

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