



Crane Hook Instruction

Website: www.ytcrane.com

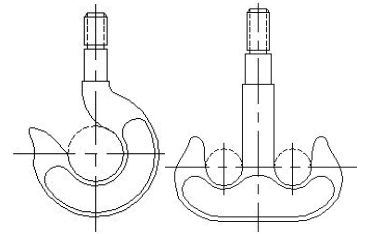
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Part 1 Introduction

◆ Application

Hook group is the most common hook device in the crane machinery. Hook hangs on the wire rope of the lifting mechanism with the help of pulleys such parts. Hook is the most widely used among the load handling device. It has such characteristics as simple manufacture and strong usability.



◆ Product category

Five strength grades M,P,S,T,V, are classified in accordance with mechanical property. As following chart:

Strength Grade	Constructional Steel					Alloy Steel		
	Upper Yield Strength MPa	Impact Absorbing Energy J /				Upper Yield Strength MPa	Impact Absorbing Energy J	
		+20℃		−20℃			+20℃	−20℃
		Length way	Cross wise	Length way	Cross wise		Length way	Length way
M	235	(55)	(55)	39	21	—	—	—
P	315					—	—	—
(S)	390					390	(35)	27
T	—	—				490	(35)	27
(V)	—	—				620	(30)	27
Note: try to avoid using the strength grades of the bracket								

With different strength grades and working class, lifting capacity of hooks sees the table below.

Strength Grade	Working Class(According to GB/T 3811)										Strength Grade
M	—	—	—	—	M3	M4	M5	M6	M7	M8	M
P	—	—	—	M3	M4	M5	M6	M7	M8	—	P
(S)	—	—	M3	M4	M5	M6	M7	M8	—	—	(S)
T	—	M3	M4	M5	M6	M7	—	—	—	—	T
(V)	M3	M4	M5	M6	M7	—	—	—	—	—	(V)
Number	Lifting capacity / t										Number
006	0.32	0.25	0.2	0.16	0.125	0.1	—	—	—	—	006
010	0.5	0.4	0.32	0.25	0.2	0.16	0.125	0.1	—	—	010
012	0.63	0.5	0.4	0.32	0.25	0.2	0.16	0.125	0.1	—	012

020	1	0.8	0.63	0.5	0.4	0.32	0.25	0.2	0.16	0.12 5	020
025	1.25	1	0.8	0.63	0.5	0.4	0.32	0.25	0.2	0.16	025
04	2	1.6	1.25	1	0.8	0.63	0.5	0.4	0.32	0.25	04
05	2.5	2	1.6	1.25	1	0.8	0.63	0.5	0.4	0.32	05
08	4	3.2	2.5	2	1.6	1.25	1	0.8	0.63	0.5	08
1	5	4	3.2	2.5	2	1.6	1.25	1	0.8	0.63	1
1.6	8	6.3	5	4	3.2	2.5	2	1.6	1.25	1	1.6
2.5	12.5	10	8	6.3	5	4	3.2	2.5	2	1.6	2.5
4	20	16	12.5	10	8	6.3	5	4	3.2	2.5	4
5	25	20	16	12.5	10	8	6.3	5	4	3.2	5
6	32	25	20	16	12.5	10	8	6.3	5	4	6
8	40	32	25	20	16	12.5	10	8	6.3	5	8
10	50	40	32	25	20	16	12.5	10	8	6.3	10
12	63	50	40	32	25	20	16	12.5	10	8	12
16	80	63	50	40	32	25	20	16	12.5	10	16
20	100	80	63	50	40	32	25	20	16	12.5	20
25	125	100	80	63	50	40	32	25	20	16	25
32	160	125	100	80	63	50	40	32	25	20	32
40	200	160	125	100	80	63	50	40	32	25	40
50	250	200	160	125	100	80	63	50	40	32	50
63	320	250	200	160	125	100	80	63	50	40	63
80	400	320	250	200	160	125	100	80	63	50	80
100	500	400	320	250	200	160	125	100	80	63	100
125	—	500	400	320	250	200	160	125	100	80	125
160	—	—	500	400	320	250	200	160	125	100	160
200	—	—	—	500	400	320	250	200	160	125	200
250	—	—	—	—	500	400	320	250	200	160	250

Note:1 Mechanism working class below M3 is considered according to M3.

2 T.V strength grade hooks are not recommended to be used with metallurgical cranes.

Hooks have single hook and double hooks according to shape.

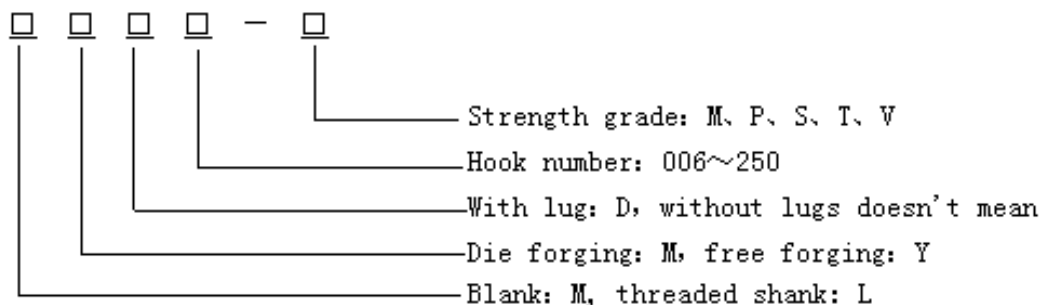
Model:

MM type, MMDtype, MY type, MYD type are classified according to structure and casting way of single-hook and double-hook workblank. It is recommended that 006~40 hooks adopt MM type or MMD type, and 10~250 hooks adopt MY type or MYD type.

Single- hook and double- hook structure and casting way is classified into LM type, LMD type, LY type and LYD type.



Mark:



Technological requirement, testing method and testing rule conform to GB/T 10051-2010.

◆ Features

Hook often bears the impact of shock and cutting load in the working process, so hook material should have either enough strength or better toughness. Forging hook material adopts high-quality low carbon killed steel or low carbon alloy steel, such as 20 high-quality low carbon steel, 16Mn, 20MnSi, 36MnSi, which is annealed after being forged.

Manufacturing is simple and it is easy to operate, but stress condition is bad so it is mainly used in the workplace below 80t lifting capacity. When lifting capacity is big, force symmetry double hooks are adopted. There are single hook and double hooks about strap type hook.

Strap type hook is made up of hook chips which is punched and sheared from 16Mn steel plate of thickness no less than 20mm, and then riveted by rivets. When materials are unloaded, height direction of board hook and direction of steel plate rolling are the same, which can improve strength of hook. In order to make load uniformly distribute into every chip, and reduce abrasion of wire rope. Disconnectable base plates are set at the mouth of hook.

When individual plate has flaws, the whole hook is not damaged. The safety is good, but dead weight is big. Therefore, it is mainly equipped with big lifting capacity cranes or cranes lifting molten steel ladles.



◆ Testing Method

Chemical analysis of material
Mechanical property test
Nondestructive testing



◆ Testing rule

Hooks leave factory with certificates and checking certificates (Chemical component, Mechanical property, Nondestructive testing result)

Part 2 Parameters

Parameters table of hook group for bridge and gantry cranes

Model	Ton	Material of Hook Head	Pulley Material	Pulley diameter	Multipling Power	Quality/ kg
Dgtype Gtype	3.2t	20# 16Mn DG20	HT QT Q235	300/350	2	70
	5t			430/450	2	128
	10t			430/450	3	230
	16t			565	3	377
	20t			565	4	489
	32t			680	4	835
	50t			785	5	1346
	75t			920	5	2500
	80t			920	5	3265
	100t			920/1120	5	4964
	100t double hook			890	6	4425
	160t double hook			822/1010	8	5629
	200t double hook			1180	8	8500

When the factory manufactures hook group pattern products in accordance with GB/T 10051 labeling, we can design and manufacture single-hook and double-hook group, a large tonnage single-hook and double-hook group used in ports, and large plate hooks according to the hook pattern consumers send.

Parameters of hook group for insulation bridge and gantry crane

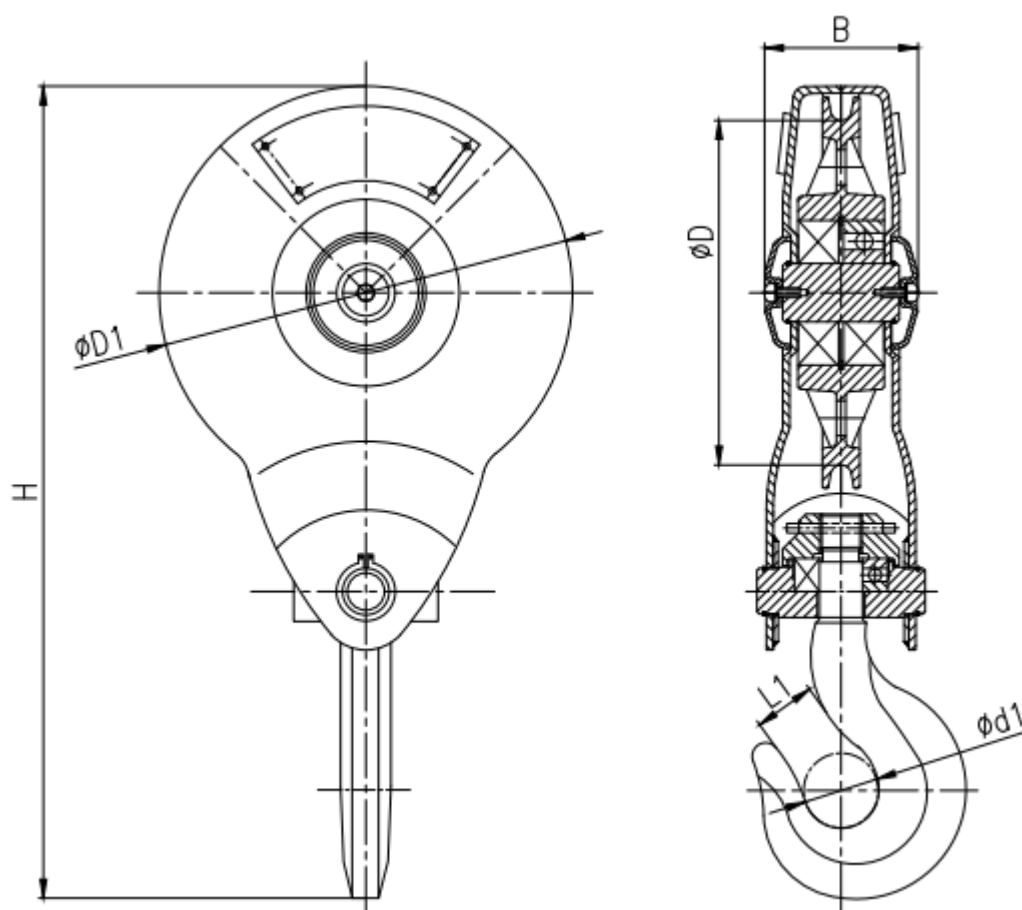
Model	Ton	Hook Head Material	Pulley Material	Pulley Diameter	Multipling Power	Quality/ kg
DGJtype	5t	20# 16Mn DG20	HT QT Q235	430/450	2	128
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	20t			565	4	489
	32t			680	4	835
	50t			785	5	1346
	75t			920	5	2500
	80t			920	5	3265
	100t			920	5	4964
	100t			890	6	4425

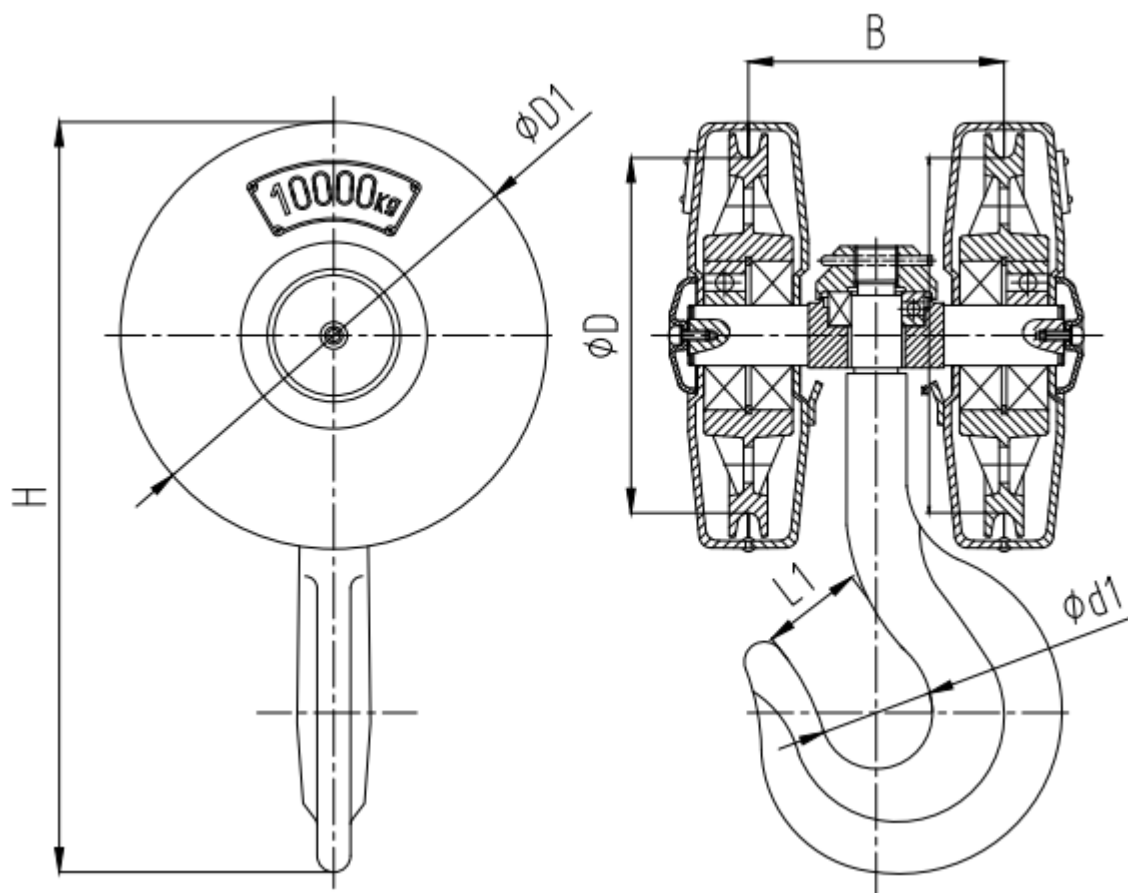
We do not only manufacture GB/T 10051 labeling hook group, but also we design and manufacture whole sealing 5t--100t insulation single-hook and double-hook group.

Dimension table of hook goup specialized in electric hoists						
Size mm Weightt	D	D1	B	H	L1	d1
1	140	177	71	346	30	40
2	210	252	87	466	40	50
3	250	290	105	570	50	60
5	295	335	121	663	60	75
10	295	355	220	635	80	100

Note: We can aslo customize 0.25t-100t hook group according to cumters' need.

Part 3 Drawing





■ Part 4 Scraping of hook

One of following cases happens, and discard as useless.

1 flaws

2 Abrasion of dangerous fracture surface reaches 10% of full size.

3 Degree of opening adds to 15% than full size.

4 Torsional deformation exceeds 10° .

5 Dangerous fracture surface and hook neck have plastic deformation.

6 Lining of board hook abrades reaches 50% of full size, and should be discarded as useless.

7 Mandrel of board hook abrades reaches 50% of full size, and should be discarded as useless.



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Tips:

You can use the phone dimensional code recognition software to scan the right side of the two-dimensional code, to quickly and easily access our web site for more information.