



DINJISO GLOBAL SUPPLIES CO., LTD
久富全球企業有限公司



DINJISO

More Motion & Solution

Reliable Quality & Technology

● **STANDARD COMPONENTS FOR PLASTIC MOLDS**



More Motion & Solution
Reliable Quality & Technology

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Reliable Quality & Technology

COMPANY INFO

DINJISO GLOBAL SUPPLIES CO., LTD is a one of the Asia largest supplier of custom components for assembly Mold, Automation & Medical industry. Our Company provides more than 1000 unique components manufactured to the Inch & Metric standard.

Our specialty is providing these components **fast, high quality, low prices and a short delivery period.**

We are currently supplying mechanical components for factory automation, press die, plastic mold and cutting tools. Our products are seen in a diverse range of industries including **Automotive, Electronic, Semiconductor, Medical, IC packaging, etc.**, and has been deliver to all around the world such as **Latin America, USA, Europe and Southeast Asia.**

DINJISO GLOBAL SUPPLIES is a leader specializing in the development for OEM and standard components of plastic mold and automation accessories for various industrial and consumer sectors. Dedicated to high-quality production and customer service, therefore, we will constantly searching for state-of-the-art products and technologies for both standardized and customized applications.

Our mission is to provide more high-quality products and best service to our customers by offer convenient resilience communication to retailer and dealer as the main goal to achieve our position in current globalization.



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Ejector Pins (European)
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Ejector Pins (European)
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Ejector Pins (European)
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Stepped Ejector Pins (Asia)
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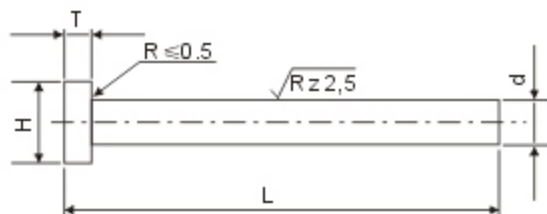


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Ejector Pins (European)



Type: JC01

Standard: **DIN1530-A** /ISO6751

Material: 1.2344 Hot Work Die Steel

Hardness:

Head = HRC 45+/-5

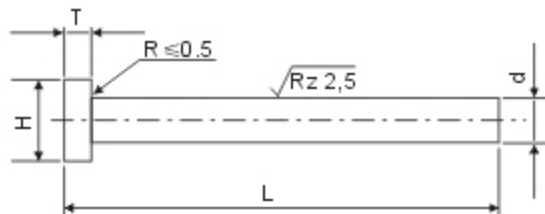
Core = HRC 40+/-5

Surface = HRC 64-75 Through Nitrided

dg6	H 0/-0.3	T 0/-0.05	L+2											
			100	125	160	200	250	315	400	500	630	800	1000	
1.5	3	1.5	•	•	•	•	•	•						
2.0	4	2	•	•	•	•	•	•						
2.2	4	2	•	•	•	•	•	•						
2.5	5	2	•	•	•	•	•	•						
2.7	5	2	•	•	•	•	•	•						
3.0	6	3	•	•	•	•	•	•	•					
3.2	6	3	•	•	•	•	•	•	•					
3.5	7	3	•	•	•	•	•	•	•	•				
3.7	7	3	•	•	•	•	•	•	•	•				
4.0	8	3	•	•	•	•	•	•	•	•				
4.2	8	3	•	•	•	•	•	•	•	•				
4.5	8	3	•	•	•	•	•	•	•	•				
5.0	10	3	•	•	•	•	•	•	•	•				
5.2	10	3	•	•	•	•	•	•	•	•				
5.5	10	3	•	•	•	•	•	•	•	•				
6.0	12	5	•	•	•	•	•	•	•	•	•			
6.2	12	5	•	•	•	•	•	•	•	•	•			
6.5	12	5	•	•	•	•	•	•	•	•	•			
7.0	12	5	•	•	•	•	•	•	•	•	•			
7.5	12	5	•	•	•	•	•	•	•	•	•			
8.0	14	5	•	•	•	•	•	•	•	•	•			
8.2	14	5	•	•	•	•	•	•	•	•	•			
8.5	14	5	•	•	•	•	•	•	•	•	•			
9.0	14	5	•	•	•	•	•	•	•	•	•			
10.0	16	5	•	•	•	•	•	•	•	•	•			
10.2	16	5	•	•	•	•	•	•	•	•	•			
10.5	16	5	•	•	•	•	•	•	•	•	•			
11.0	16	5	•	•	•	•	•	•	•	•	•			
12.0	18/20	7	•	•	•	•	•	•	•	•	•			
12.2	18/20	7	•	•	•	•	•	•	•	•	•			
12.5	18/20	7	•	•	•	•	•	•	•	•	•			
14.0	22	7	•	•	•	•	•	•	•	•	•			
16.0	22	7	•	•	•	•	•	•	•	•	•			

Order Example: - -
 - -

■ Customize are also available



Type: JC02

Standard: **DIN 1530-AHX** / ISO 6751

Material: 1.2344 Hot Work Die Steel

Hardness:

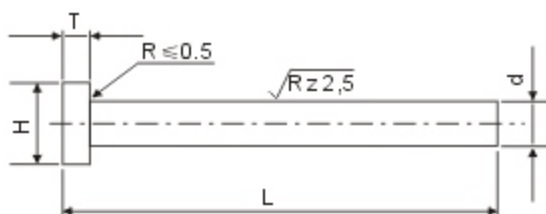
Head = HRC 50+/-2

Shaft = HRC 50+/-2 Through Hardened

d g6	H 0/-0.3	T 0/-0.05	L+2											
			100	125	160	200	250	315	400	500	630	800	1000	
1.5	3	1.5	•	•	•	•	•							
2.0	4	2	•	•	•	•	•	•						
2.2	4	2	•	•	•	•	•	•						
2.5	5	2	•	•	•	•	•	•						
2.7	5	2	•	•	•	•	•	•						
3.0	6	3	•	•	•	•	•	•	•					
3.2	6	3	•	•	•	•	•	•	•					
3.5	7	3	•	•	•	•	•	•	•	•				
3.7	7	3	•	•	•	•	•	•	•	•				
4.0	8	3	•	•	•	•	•	•	•	•				
4.2	8	3	•	•	•	•	•	•	•	•				
4.5	8	3	•	•	•	•	•	•	•	•				
5.0	10	3	•	•	•	•	•	•	•	•				
5.2	10	3	•	•	•	•	•	•	•	•				
5.5	10	3	•	•	•	•	•	•	•	•				
6.0	12	5	•	•	•	•	•	•	•	•	•			
6.2	12	5	•	•	•	•	•	•	•	•	•			
6.5	12	5	•	•	•	•	•	•	•	•	•			
7.0	12	5	•	•	•	•	•	•	•	•	•			
7.5	12	5	•	•	•	•	•	•	•	•	•			
8.0	14	5	•	•	•	•	•	•	•	•	•			
8.2	14	5	•	•	•	•	•	•	•	•	•			
8.5	14	5	•	•	•	•	•	•	•	•	•			
9.0	14	5	•	•	•	•	•	•	•	•	•			
10.0	16	5	•	•	•	•	•	•	•	•	•			
10.2	16	5	•	•	•	•	•	•	•	•	•			
10.5	16	5	•	•	•	•	•	•	•	•	•			
11.0	16	5	•	•	•	•	•	•	•	•	•			
12.0	18/20	7	•	•	•	•	•	•	•	•	•			
12.2	18/20	7	•	•	•	•	•	•	•	•	•			
12.5	18/20	7	•	•	•	•	•	•	•	•	•			
14.0	22	7	•	•	•	•	•	•	•	•	•			
16.0	22	7	•	•	•	•	•	•	•	•	•			

Order Example: - -
 - -

■ Customize are also available



Type: JC03

Standard: **DIN1530-AHX** / ISO6751

Material: 1.3343 High Speed Steel

Hardness:

Head = HRC58+/-2

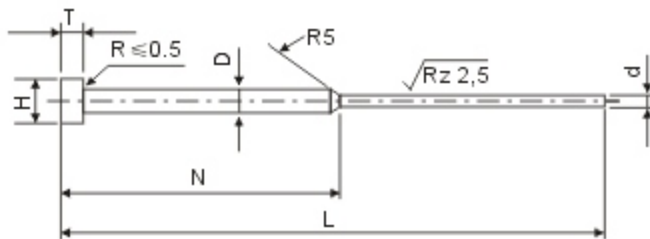
Shaft = HRC58+/-2 Through Hardened

d g6	H 0/-0.3	T 0/-0.05	L+2					
			100	125	160	200	250	315
1.5	3	1.5	•	•				
2.0	4	2	•	•	•	•	•	
2.2	4	2	•	•	•	•	•	
2.5	5	2	•	•	•	•	•	
2.7	5	2	•	•	•	•	•	
3.0	6	3	•	•	•	•	•	•
3.2	6	3	•	•	•	•	•	•
3.5	7	3	•	•	•	•	•	•
3.7	7	3	•	•	•	•	•	•
4.0	8	3	•	•	•	•	•	•
4.2	8	3	•	•	•	•	•	•
4.5	8	3	•	•	•	•	•	•
5.0	10	3	•	•	•	•	•	•
5.2	10	3	•	•	•	•	•	•
5.5	10	3	•	•	•	•	•	•
6.0	12	5	•	•	•	•	•	•
6.2	12	5		•	•	•	•	•
6.5	12	5		•	•	•	•	•
7.0	12	5		•	•	•	•	•
7.5	12	5		•	•	•	•	•
8.0	14	5		•	•	•	•	•
8.2	14	5		•	•	•	•	•
8.5	14	5		•	•	•	•	•
9.0	14	5		•	•	•	•	•
10.0	16	5		•	•	•	•	•
10.2	16	5		•	•	•	•	•
10.5	16	5		•	•	•	•	•
11.0	16	5		•	•	•	•	•
12.0	18/20	7		•	•	•	•	•

Order Example: - -
 - -

■ Customize are also available

Stepped Ejector Pins (European)



Type: JC04

Standard: **DIN1530-C** / ISO8694

Material: 1.2344 Hot Work Die Steel

Hardness:

Head = HRC45+/-5

Core = HRC40+/-5

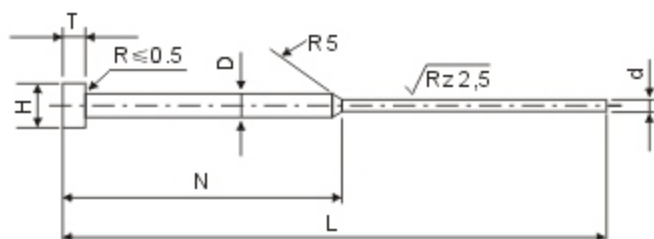
Surface = HRC64-75 Through Nitrided

d g6	D 0/-0.1	H 0/-0.3	T 0/-0.05	L+2 / N -1/-2			
				80/35	100/50	125/50	160/75
0.8	2.0	4	2	•	•	•	•
0.9	2.0	4	2	•	•	•	•
1.0	2.0	4	2	•	•	•	•
1.1	2.0	4	2	•	•	•	•
1.2	2.0	4	2	•	•	•	•
1.3	2.0	4	2	•	•	•	•
1.4	2.0	4	2	•	•	•	•
1.5	3.0	6	3	•	•	•	•
1.6	3.0	6	3	•	•	•	•
1.7	3.0	6	3	•	•	•	•
1.8	3.0	6	3	•	•	•	•
1.9	3.0	6	3	•	•	•	•
2.0	3.0	6	3	•	•	•	•
2.1	3.0	6	3	•	•	•	•
2.2	3.0	6	3	•	•	•	•
2.3	3.0	6	3	•	•	•	•
2.4	3.0	6	3	•	•	•	•
2.5	3.0	6	3	•	•	•	•
2.6	3.0	6	3	•	•	•	•
2.7	3.0	6	3	•	•	•	•
2.8	3.0	6	3	•	•	•	•
2.9	3.0	6	3	•	•	•	•

Order Example: - - - -
 - - - -

Customize are also available

Stepped Ejector Pins (European)



Type: JC05

Standard: **DIN1530-C** / ISO8694

Material: 1.3343 High Speed Steel

Hardness:

Head = HRC58+/-2

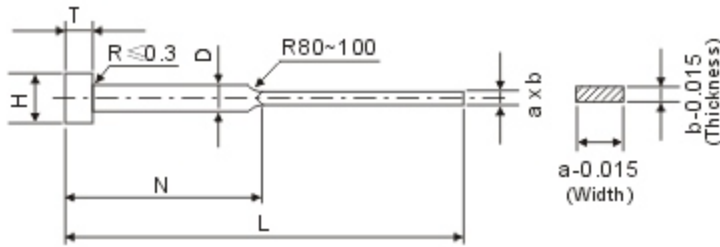
Core = HRC58+/-2 Through Hardened

d g6	D 0/-0.1	H 0/-0.3	T 0/-0.05	L+2 / N-1/2			
				80/35	100/50	125/50	160/75
0.8	2.0	4	2	•	•	•	•
0.9	2.0	4	2	•	•	•	•
1.0	2.0	4	2	•	•	•	•
1.1	2.0	4	2	•	•	•	•
1.2	2.0	4	2	•	•	•	•
1.3	2.0	4	2	•	•	•	•
1.4	2.0	4	2	•	•	•	•
1.5	3.0	6	3	•	•	•	•
1.6	3.0	6	3	•	•	•	•
1.7	3.0	6	3	•	•	•	•
1.8	3.0	6	3	•	•	•	•
1.9	3.0	6	3	•	•	•	•
2.0	3.0	6	3	•	•	•	•
2.1	3.0	6	3	•	•	•	•
2.2	3.0	6	3	•	•	•	•
2.3	3.0	6	3	•	•	•	•
2.4	3.0	6	3	•	•	•	•
2.5	3.0	6	3	•	•	•	•
2.6	3.0	6	3	•	•	•	•
2.7	3.0	6	3	•	•	•	•
2.8	3.0	6	3	•	•	•	•
2.9	3.0	6	3	•	•	•	•

Order Example: - - - -
 - - - -

Customize are also available

Flat Ejector Pins (European)



Type: JC06

Standard: **DIN1530-F** / ISO8693

Material: 1.2344 Hot Work Die Steel

Hardness:

Head = HRC 45+/-5

Core = HRC 40+/-5

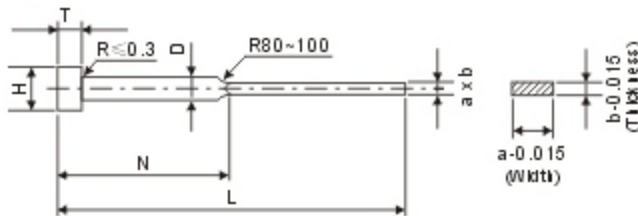
Surface = HRC 64-75T through Nitrided

a	b	D	H	T	L+2 / N-1/2										
					60/30	80/40	100/50	125/63	160/80	200/100	250/125	315/160	400/200		
3.8	0.8	4.2	8	3	•	•	•	•	•						
	1.0				•	•	•	•	•						
	1.2				•	•	•	•	•	•					
4.5	1.0	5	10	3		•	•	•	•	•					
	1.2					•	•	•	•	•					
	1.5					•	•	•	•	•					
5.5	1.0	6	12	5		•	•	•	•	•					
	1.2					•	•	•	•	•					
	1.5					•	•	•	•	•					
	2.0					•	•	•	•	•					
7.5	1.2	8	14	5			•	•	•	•	•	•			
	1.5						•	•	•	•	•	•			
	2.0						•	•	•	•	•	•	•		
9.5	1.5	10	16	5				•	•	•	•	•	•		
	2.0							•	•	•	•	•	•		
11.5	2	12	20	7				•	•	•	•	•	•		
	2.5							•	•	•	•	•	•		
15.5	2	16	22	7					•	•	•	•	•	•	
	2.5								•	•	•	•	•	•	•

Order Example: - - - - -
 - - - - -

Customize are also available

Flat Ejector Pins (European)



Type: JC06

Standard: **DIN1530-F** / ISO8693

Material: 1.3343 High Speed Steel

Hardness:

Head = HRC58+/-2

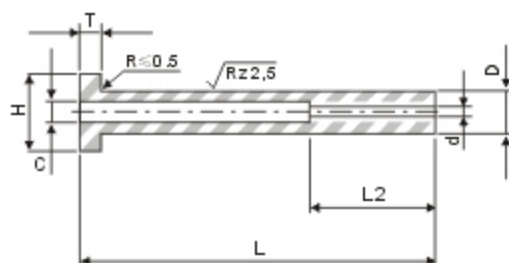
Core = HRC58+/-2 Through Hardened

a 0/-0.05	b 0/-0.05	D 0/-0.1	H 0/-0.3	T 0/-0.05	L+2 / N-1/-2									
					60/30	80/40	100/50	125/63	160/80	200/100	250/125	315/160	400/200	
3.8	0.8	4.2	8	3	•	•	•	•	•					
	1.0				•	•	•	•						
	1.2				•	•	•	•	•					
4.5	1.0	5	10	3		•	•	•	•	•				
	1.2					•	•	•	•					
	1.5					•	•	•	•					
5.5	1.0	6	12	5		•	•	•	•	•				
	1.2					•	•	•	•					
	1.5					•	•	•	•					
	2.0					•	•	•	•					
7.5	1.2	8	14	5			•	•	•	•	•	•		
	1.5						•	•	•	•	•			
	2.0						•	•	•	•	•			
9.5	1.5	10	16	5				•	•	•	•	•		
	2.0							•	•	•	•	•		
11.5	2	12	20	7					•	•	•	•	•	
	2.5								•	•	•	•	•	
15.5	2	16	22	7						•	•	•	•	•
	2.5									•	•	•	•	•

Order Example: - - - - -
 - - - - -

Customize are also available

Ejector Sleeves (European)



Type: JC07

Standard: **DIN16756** /ISO8405

Material: 1.2344 Hot Die Steel

Hardness:

Core+Head = HRC45+/-5

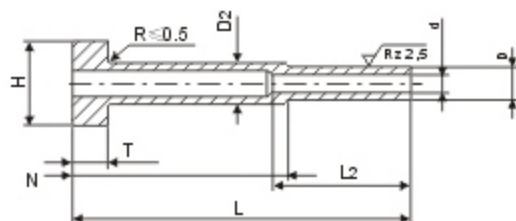
Surface ID & OD = HRC64-75 Through Nitrided

D g6	d H5	H 0 -0.3	T 0 -0.05	L2	L3						
					50~200	201~300	301~400	401~500	501~600	601~700	701~
4	2-2.5	8	3	35	•	•	•	•			
4.5	2-3				•	•	•	•			
5	2-3.5	10	5	45	•	•	•	•	•	•	•
5.5	2-4				•	•	•	•	•	•	•
6	2-4.5	12	5	45	•	•	•	•	•	•	•
6.5	2-5				•	•	•	•	•	•	•
7	2.5-5.5	14	5	45	•	•	•	•	•	•	•
8	3-6				•	•	•	•	•	•	•
9	3.5-7	16	5	45	•	•	•	•	•	•	•
10	3.5-7				•	•	•	•	•	•	•
11	3.5-8	20	7	45	•	•	•	•	•	•	•
12	3.5-8				•	•	•	•	•	•	•

Order Example: - - -
 - - -

■ Customize are also available

Stepped Ejector Sleeves (European)



Type: JC08

Standard: **DIN16756** /ISO8405

Material: 1.2344 Hot Work Die Steel

Hardness:

Core+Head = HRC45+/-5

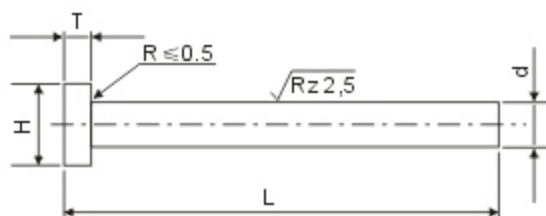
Surface ID & OD = HRC64-75 Nitrided

D 0 -0.05	D2 g6	d H5	H 0 -0.3	T 0 -0.05	L2	L						
						50~200	201~300	301~400	401~500	501~600	601~700	701~
4	3~11	2-2.5	8	3	35	•	•	•	•			
4.5		2-3				•	•	•	•			
5		2-3.5	10	5	45	•	•	•	•	•	•	•
5.5		2-4				•	•	•	•	•	•	•
6		2-4.5	12	5	45	•	•	•	•	•	•	•
6.5		2-5				•	•	•	•	•	•	•
7		2.5-5.5	14	5	45	•	•	•	•	•	•	•
8		3-6				•	•	•	•	•	•	•
9		3.5-7	16	5	45	•	•	•	•	•	•	•
10		3.5-7				•	•	•	•	•	•	•
11		3.5-8	20	7	45	•	•	•	•	•	•	•
12		3.5-8				•	•	•	•	•	•	•

Order Example: Type - D - D2 - d - L - N

JC08 - 4 - 3 - 2 - 100 - From Request

■ Customize are also available



Type: JC09

Standard: JIS

Material: SKD61 Hot Work Die Steel

Hardness:

Head = HRC45+/-5

Core = HRC40+/-5

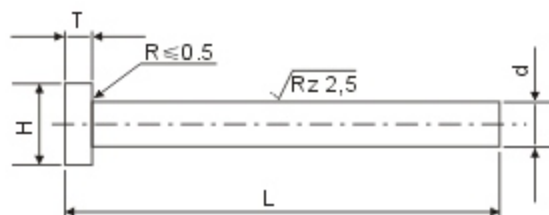
Surface = HRC64-75 Through Nitrided

d -0.01 -0.02	H +0/-0.1	T +0/-0.02	L+5+0										
			100	150	200	250	300	350	400	500	600	700	800
1.0	3/6	4	•	•	•	•	•	•	•				
1.5	3/6	4	•	•	•	•	•	•	•	•			
2.0	4/6	4	•	•	•	•	•	•	•	•	•	•	•
2.5	5/6	4	•	•	•	•	•	•	•	•	•	•	•
3.0	6	4	•	•	•	•	•	•	•	•	•	•	•
3.5	7	4	•	•	•	•	•	•	•	•	•	•	•
4.0	8	4/6	•	•	•	•	•	•	•	•	•	•	•
4.5	9	4/6	•	•	•	•	•	•	•	•	•	•	•
5.0	9	4/6	•	•	•	•	•	•	•	•	•	•	•
5.5	10	4/6	•	•	•	•	•	•	•	•	•	•	•
6.0	10	4/6	•	•	•	•	•	•	•	•	•	•	•
6.5	11	4/6	•	•	•	•	•	•	•	•	•	•	•
7.0	11	4/6	•	•	•	•	•	•	•	•	•	•	•
7.5	13	4/8	•	•	•	•	•	•	•	•	•	•	•
8.0	13	4/8	•	•	•	•	•	•	•	•	•	•	•
8.5	14	4/8	•	•	•	•	•	•	•	•	•	•	•
9.0	14	4/8	•	•	•	•	•	•	•	•	•	•	•
10.0	15	4/8	•	•	•	•	•	•	•	•	•	•	•
12.0	17	4/8	•	•	•	•	•	•	•	•	•	•	•
14.0	19	4/8	•	•	•	•	•	•	•	•	•	•	•
16.0	21	4/8	•	•	•	•	•	•	•	•	•	•	•
20.0	25	4/8	•	•	•	•	•	•	•	•	•	•	•
25.0	30	4/8	•	•	•	•	•	•	•	•	•	•	•

※PLEASE SPECIFY THE HEAD DIMENSION WHEN ORDERING

Order Example: - - - -
 - - - -

■ Customize are also available



Type: JC10 & JC11

Standard: **JIS**

Material: SKH51 High Speed Steel

Hardness:

Head = HRC58+/-4

Core = HRC58+/-4 Through Hardened

Shaft Tolerances:

Type: JC10=+0/-0.005

Type: JC11=-0.01/-0.02

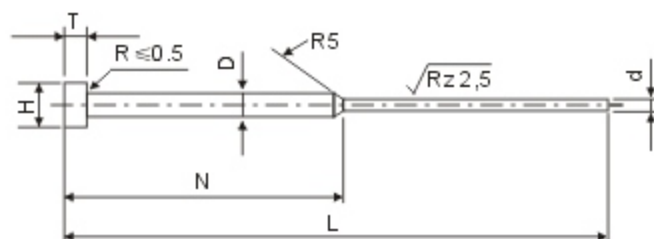
※PLEASE SPECIFY THE PIN TYPE WHEN ORDERING

d	H +0/-0.2	T +0/-0.02	L+5+0				
			100	150	200	250	300
0.8	3	4	•	•	•	•	•
0.9	3	4	•	•	•	•	•
1.0	3	4	•	•	•	•	•
1.1,1.2	3	4	•	•	•	•	•
1.3,1.4	3	4	•	•	•	•	•
1.5	3	4	•	•	•	•	•
1.6	3	4	•	•	•	•	•
1.7,1.8,1.9	4.0	4	•	•	•	•	•
2.0	4.0	4	•	•	•	•	•
2.5	5.0	4	•	•	•	•	•
3.0	6.0	4	•	•	•	•	•
3.5	7.0	4	•	•	•	•	•
4.0	8.0	6	•	•	•	•	•
4.5	9.0	6	•	•	•	•	•
5.0	9.0	6	•	•	•	•	•
5.5	10	6	•	•	•	•	•
6.0	10	6	•	•	•	•	•
6.5	11	6	•	•	•	•	•
7.0	11	6	•	•	•	•	•
8.0	13	8	•	•	•	•	•
10.0	15	8	•	•	•	•	•
12.0	17	8	•	•	•	•	•

※PLEASE SPECIFY THE HEAD DIMENSION WHEN ORDERING

Order Example: Type - d - H - T - L
 JC10 - 1 - 3 - 4 - 100
 JC11 - 1 - 3 - 4 - 100

■ Customize are also available



Type: JC12

Standard: JIS

Material: SKD61 Hot Work Die Steel

Hardness:

Head = HRC45+/-5

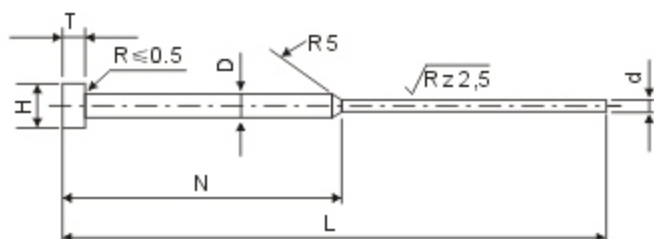
Core = HRC40+/-5

Surface = HRC64-75 Through Nitrided

D 0/-0.05	d -0.01/-0.02	H 0 -0.3	T 0 -0.05	L ^{+0.5} / ₊₃				
				100	150		200	
				N=40	N=50	N=70	N=70	N=100
2.0	0.8	4	4	•	•	•	•	•
	1.0			•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
2.5	0.8	6		•	•	•	•	•
	1.0			•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
3.0	1.0	6		•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
	2.0			•	•	•	•	•

Order Example: - - - -
 - - - -

■ Customize are also available



Type: JC13

Standard: JIS

Material: SKH51 High Speed Steel

Hardness:

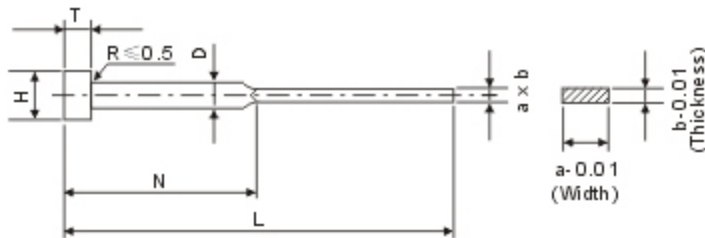
Head = HRC58+/-4

Core = HRC58+/-4 Through Hardened

D 0/-0.05	d -0.01/-0.02	H 0 -0.3	T 0 -0.05	L ^{+0.5} / ₊₃				
				100	150		200	
				N=40	N=50	N=70	N=70	N=100
2.0	0.8	4	4	•	•	•	•	•
	1.0			•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
2.5	0.8	5		•	•	•	•	•
	1.0			•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
3.0	1.0	6		•	•	•	•	•
	1.2			•	•	•	•	•
	1.5			•	•	•	•	•
	2.0			•	•	•	•	•

Order Example: - - - -
 - - - -

■ Customize are also available



Type: JC14

Standard: JIS

Material: SKD61 Hot Work Die Steel

Hardness:

Head = HRC 45+/-5

Core = HRC 40+/-5

Surface = HRC 64-75 Through Nitrided

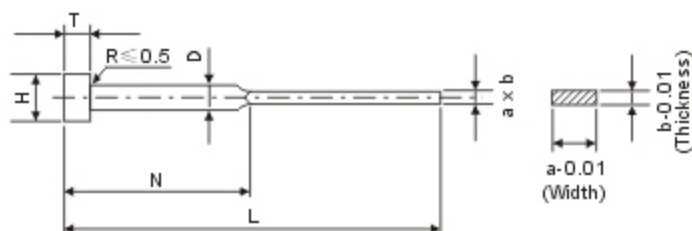
D 0/-0.05	b 0/-0.01	a 0/-0.01	H 0 -0.3	T 0 -0.05	L ^{+0.5} ₊₃					N
					100	150	200	250	300	
1.5	0.6~1.3	0.3~	6	4	•	•	•	-	-	N ≥ 30 30 ≤ (L-N)
2.0	0.8~1.8				•	•	•	•	-	
2.5	0.8~2.3				•	•	•	•	-	
3.0	0.8~2.8		•		•	•	•	•		
3.5	1.0~3.3		•		•	•	•	•		
4.0	1.0~3.8		•		•	•	•	•		
4.5	1.2~4.3	0.4~	9	6	•	•	•	•	•	
5.0	1.5~4.8		•		•	•	•	•		
5.5	1.8~5.3		•		•	•	•	•		
6.0	2.0~5.8		•		•	•	•	•		
6.5	2.0~6.3		-		•	•	•	•		
7.0	2.5~6.8		-		•	•	•	•		
8.0	2.5~7.8	0.5~	13	8	-	•	•	•	•	
9.0	2.5~8.8		14		-	•	•	•	•	
10.0	3.0~9.8		15		-	•	•	•	•	
12.0	3.0~11.8		17		-	•	•	•	•	

※PLEASE SPECIFY THE "N" LENGTH WHEN ORDERING

■ Customize are also available

Order Example:

Type	-	D	-	a	-	b	-	L	-	N
JC14	-	2	-	0.3	-	0.6	-	100	-	30



Type: JC15

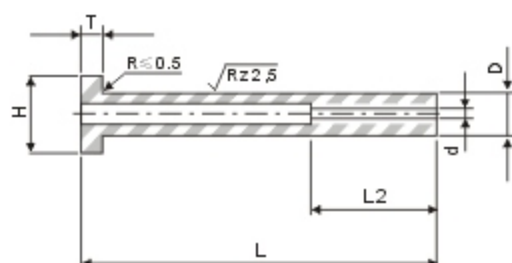
Standard: JIS
 Material: SKH51 High Speed Steel
 Hardness:
 Head = HRC 58+/-4
 Core = HRC 58+/-4 Through Hardened

D 0/-0.05	b 0/-0.01	a 0/-0.01	H 0 -0.3	T 0 -0.05	L ^{+0.5} ₊₃					N
					100	150	200	250	300	
1.5	0.6~1.3	0.3~	6	4	•	•	•	-	-	N ≥ 30 30 ≤ (L-N)
2.0	0.8~1.8				•	•	•	•	-	
2.5	0.8~2.3				•	•	•	•	-	
3.0	0.8~2.8		•		•	•	•	•		
3.5	1.0~3.3		7		•	•	•	•	•	
4.0	1.0~3.8	8	•	•	•	•	•			
4.5	1.2~4.3	0.4~	9	6	•	•	•	•	•	
5.0	1.5~4.8				•	•	•	•	•	
5.5	1.8~5.3		10		•	•	•	•	•	
6.0	2.0~5.8		•		•	•	•	•		
6.5	2.0~6.3		11		-	•	•	•	•	
7.0	2.5~6.8	0.5~	13	8	-	•	•	•	•	
8.0	2.5~7.8				14	-	•	•	•	•
9.0	2.5~8.8		15		-	•	•	•	•	
10.0	3.0~9.8		17		-	•	•	•	•	
12.0	3.0~11.8		-		•	•	•	•	•	

※PLEASE SPECIFY THE "N" LENGTH WHEN ORDERING

■ Customize are also available

Order Example: - - - - -
 - - - - -



Type: JC16

Standard: JIS

Material: SKD61 Hot Work Steel

Hardness:

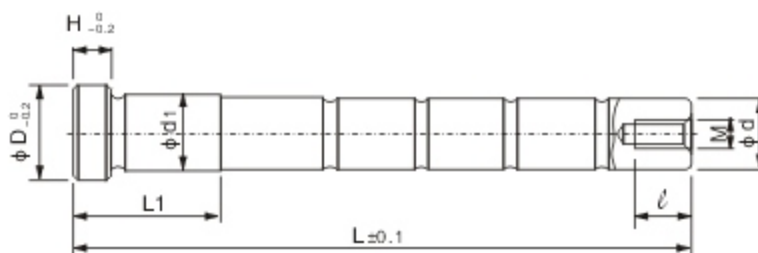
Core+Head = HRC45+/-5

Surface ID & OD = HRC64-75 Through Nitrided

D	d H7	H 0/-0.3	T 0/-0.05	L 0/+3												
				100	150	200	250	300	350	400	450	500	550	600	650	700
4	2	8	6	•	•	•	•	•								
	2.5			•	•	•	•									
4.5	2.0	9		•	•	•	•	•	•							
	3			•	•	•	•	•	•	•	•	•	•	•	•	•
5	3.0	9		•	•	•	•	•	•	•	•	•	•	•	•	•
	3.5			•	•	•	•	•	•	•	•	•	•	•	•	•
5.5	2.5	10		•	•	•	•	•	•	•	•	•	•	•	•	•
	3.0			•	•	•	•	•	•	•	•	•	•	•	•	•
6	4	10		•	•	•	•	•	•	•	•	•	•	•	•	•
	2.5			•	•	•	•	•	•	•	•	•	•	•	•	•
6.5	3.5	11		•	•	•	•	•	•	•	•	•	•	•	•	•
	4			•	•	•	•	•	•	•	•	•	•	•	•	•
7	2.5	11	•	•	•	•	•	•	•	•	•	•	•	•	•	
	3.0		•	•	•	•	•	•	•	•	•	•	•	•	•	
8	4.0	13	•	•	•	•	•	•	•	•	•	•	•	•	•	
	5		•	•	•	•	•	•	•	•	•	•	•	•	•	
9	3.5	14	•	•	•	•	•	•	•	•	•	•	•	•	•	
	4.5		•	•	•	•	•	•	•	•	•	•	•	•	•	
10	5	15	•	•	•	•	•	•	•	•	•	•	•	•	•	
	6.5		•	•	•	•	•	•	•	•	•	•	•	•	•	
11	4.5	16	•	•	•	•	•	•	•	•	•	•	•	•	•	
	7.0		•	•	•	•	•	•	•	•	•	•	•	•	•	
12	4.5	17	•	•	•	•	•	•	•	•	•	•	•	•	•	
	6.0		•	•	•	•	•	•	•	•	•	•	•	•	•	
	7.5		•	•	•	•	•	•	•	•	•	•	•	•		
	8		•	•	•	•	•	•	•	•	•	•	•	•		

Order Example: Type - D - d - L - L2
 JC16 - 4 - 2 - 100 - from Request

Customize are also available



Type: JC19

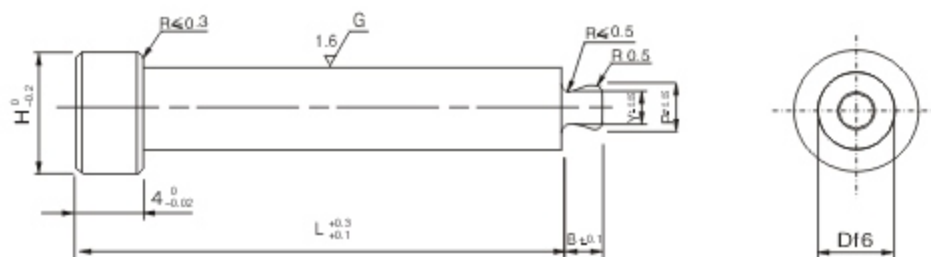
Material: *SUJ2 High Carbon Chrome Bearing Steel*

Hardness: HRC58+4

D	H	M	ℓ	d	d Tolerance	d1	d1 Tolerance	L
17	6	M6	12	12	-0.016 -0.027	12	+0.018 +0.007	50-300
20	8	M10	20	16				
25	10	M12	25	20	-0.020 -0.033	20	+0.021 +0.008	
30	12	M14	30	25				
35	14	M16	35	30	-0.025 -0.041	30	+0.025 +0.009	
40	16			35				
45	18			40				

Order Example: Type - D - L - L1
 JC19 - 17 - 50 - From Request

Customize are also available



Type: JC20

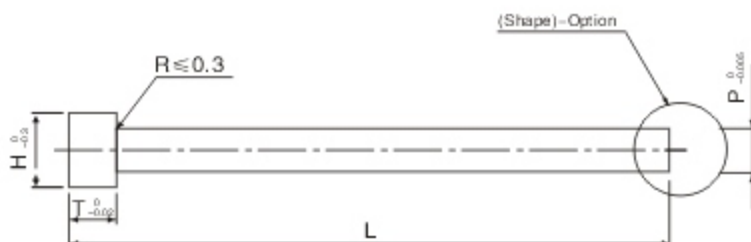
Material: SKD61-H13-Hot Work Die Steel

Hardness: HRC 46+/-5, Through Hardened

H	B	P	Y	D	L											
					15	20	25	30	35	40	45	50	60	70	80	
4	2	1.5	1.0	2	●	●	●	●	●	●						
5		2.3	1.8	3	●	●	●	●	●	●	●					
6	2.5	2.8	2.3	4			●	●	●	●	●	●	●	●	●	●
7	3	3.3	2.8	5			●	●	●	●	●	●	●	●	●	●
8		3.8	3.0	6				●	●	●	●	●	●	●	●	●
10	4	5.8	5.0	8				●	●	●	●	●	●	●	●	●

Order Example: - -
 - -

■ Customize are also available



※PLEASE SPECIFY THE HEAD SHAPE WHEN ORDERING

<p>A</p> <p>$45^\circ \approx 30$ $G \pm 0.05$ $L \begin{matrix} 0 \\ -0.02 \end{matrix}$</p> <p>$0.1 \leq G < P/2$ Request 0.1mm</p>	<p>B</p> <p>$K^\circ \approx 30$ $L \begin{matrix} 0 \\ -0.05 \end{matrix}$</p> <p>$20 \leq K \leq 60$ Request 1°</p>	<p>C</p> <p>$K^\circ \approx 30$ $S \pm 0.05$ $L \begin{matrix} 0 \\ -0.02 \end{matrix}$</p> <p>Request 0.1mm $0 \leq K \leq 45$ Request 1°</p>	<p>D</p> <p>$Q \approx 0.1$ $L \begin{matrix} 0 \\ -0.02 \end{matrix}$</p> <p>$0.2 \leq Q < P/2$ Request 0.1mm</p>
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Type: JC21 & JC22

Material: JC-21-SKD61-H13-Hot Work Die Steel

JC-22-SKH51-HSS-High Speed Steel

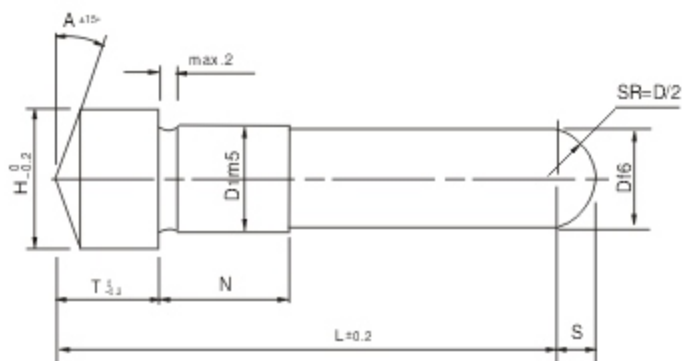
Hardness: JC-21-HRC 48+/-4, Through Hardened

JC-22-HRC 58+/-4, Through Hardened

Shape	H	0.01mm Increment		0.1mm Increment
		L	P	T
A B C D	5	12.00~100.00	2.00~3.00	1.5~20.0 T ≤ L - 10
	6		2.50~4.00	
	7		3.00~5.00	
	8		4.00~6.00	
	9		4.00~7.00	
	10		5.00~8.00	
	11		6.00~9.00	
	12		7.00~10.00	
	13	8.00~11.00		
	15	10.00~13.00		

Order Example: Type - Shaps - H - L - P - L
JC21 - A - 5 - 12 - 3 - 2

■ Customize are also available



Type: JC23

Material: SUJ2 High Carbon Chrome Bearing Steel

Hardness: HRC58+4

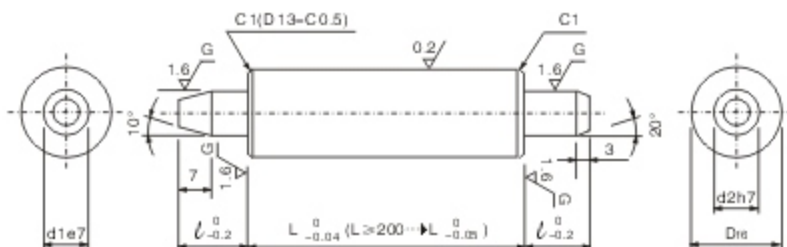
D1	m5	D	f6	T	H	S	0.1mm Increment	A	L
							N	1° Increment	
4	+0.009 +0.004	4	-0.010 -0.018	5	7	2	2 ≤ N N ≤ L-T-1 or N=0	0-30	50-300
5		8			2.5				
6		9			3				
8	+0.012 +0.006	8	-0.013 -0.022	10	11	4			
10	10	13	5						
12	12	15	6						
13	+0.015 +0.007	13	-0.016 -0.027	13	16	6.5			
15		15			18	7.5			
16		16			19	8			
20	+0.017 +0.008	20	-0.020 -0.033	15	23	10			
25		25			28				
30		30			35				
32	+0.020 +0.009	32	-0.025 -0.041	15	37	10			
35		35			40				
40		40			45				

Order Example: - - - - -
 - - - - -

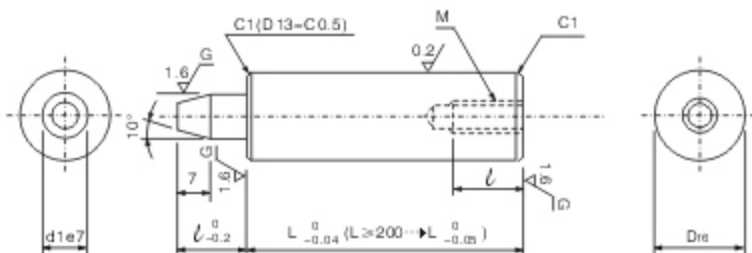
Customize are also available



JC24



JC25



D	M x Pitch
13 - 16	M6 x 1.0
20 - 25	M8 x 1.25
30 - 35 - 40	M10 x 1.5

Type: JC24 & JC25

Material: SUJ2 High Carbon Chrome Bearing Steel
Hardness: HRC58+4

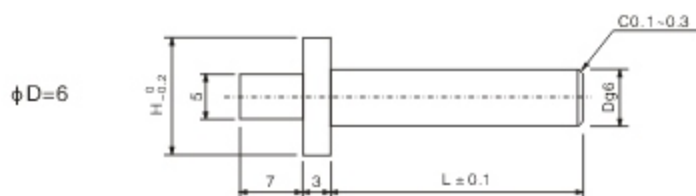
D	L	D ₁₆	d1e7	d2 h7	l
13	40-95	13	8	8	12
	100-125				
	130-150				
16	50-95	16	10	10	15
	100-125				
	130-150				
20	50-95	20	10	10	15
	100-125				
	130-150				
25	50-95	25	10	10	15
	100-125				
	130-150				
30	50-125	30	20	20	20
	130-155				
	160-200				
	205-230				
	235-260				
	265-300				
35	50-125	35	20	20	20
	130-155				
	160-200				
	205-230				
	235-260				
40	90-125	40	20	20	20
	130-155				
	160-200				
	205-230				
	235-260				

Order Example: - -
 - -

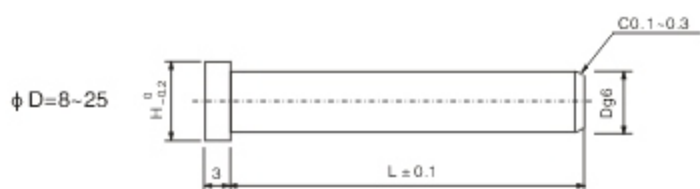
■ Customize are also available



JC26



JC27



Type: JC26 & JC27

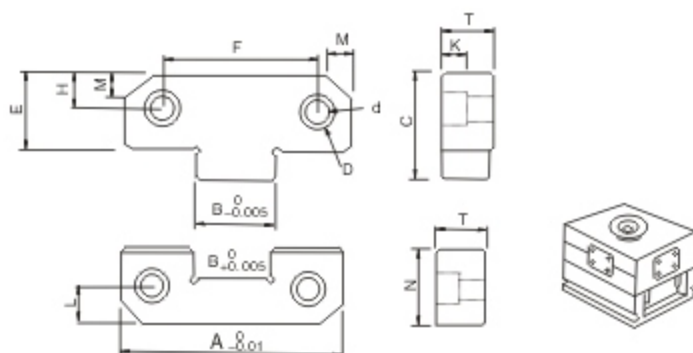
Material: SKH51-HSS- High Speed Steel

Hardness: HRC58+/-4 Through Hardened

Dg6		L 1mm Increment	H
6	-0.004 -0.012	10-50	8
8	-0.005		10
10	-0.014		13
13	-0.006	10-70	16
16	-0.017		19
20	-0.007	20-80	23
25	-0.020		28

Order Example: - -
 - -

■ Customize are also available



Type: JC28 & JC29

Material: YK30 Tool Steel

Hardness: HRC58+/-2

Type: JC28 (METRIC STANDARD)

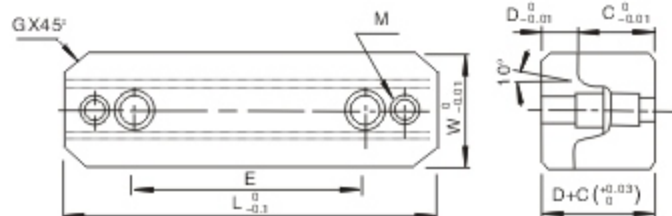
A	B	C	D	d	E	F	H	L	M	T	K	N
38	12	30	10.5	6.5	22	22	7	7	5	13	8	22
50	17	30	10.5	6.5	21.5	34	11	11	5	16	8	21.5
75	25	50	16.5	10.5	36	50	18	18	5	19	12	36
100	35.4	65	16.5	10.5	45	70	22	22	5	19	12	45
125	45	65	16.5	10.5	45	84	22	22	5	25	12	45

Type: JC29 (INCH STANDARD)

A	B	C	D	d	E	F	H	L	M	T	K	N
38.1	12.7	29.972	11	7	22.098	23.826	11.15	7.14	4.83	15.748	7	22.098
50.8	17.272	29.972	11	7	22.098	31.75	11.1	9.53	4.83	15.748	7	22.098
76.2	25.4	48.514	15	10	34.544	57.15	17.46	17.46	4.83	18.923	10	34.798
101.6	34.925	67.056	15	10	47.498	69.85	22.23	22.23	4.83	18.923	10	47.498
127	44.45	67.056	19	14	47.498	88.9	22.23	22.23	4.83	28.448	14	47.798

Order Example: Type - A
JC28 - 38

Customize are also available



Type: JC30 & JC31

Material: YK30 Tool Steel
Hardness: HRC58+/-2

Type: JC30 (METRIC STANDARD)

L	E	W	D	C	G	M
50	0	25	8	17.5	5	M5
100	60	30	10	22	5	M6
150	100	40	13	25	5	M8

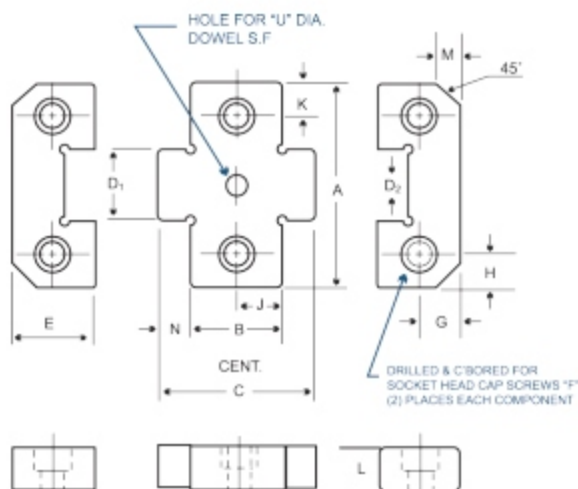
Type: JC31 (INCH STANDARD)

L	E	W	D	C	G	M
50.29	0	25.36	7.92	17.53	5.08	3/16"-24
101.09	63.5	31.71	9.53	22.1	5.08	1/4"-20
151.89	101.6	38.1	12.7	25.4	5.08	3/8"-16

Order Example: -
 -

■ Customize are also available

Straight Block Set - X Type -



Type: JC32 & JC33

Material: YK30 Tool Steel

Hardness: HRC58+/-2

TYPE: JC32 (METRIC STANDARD)

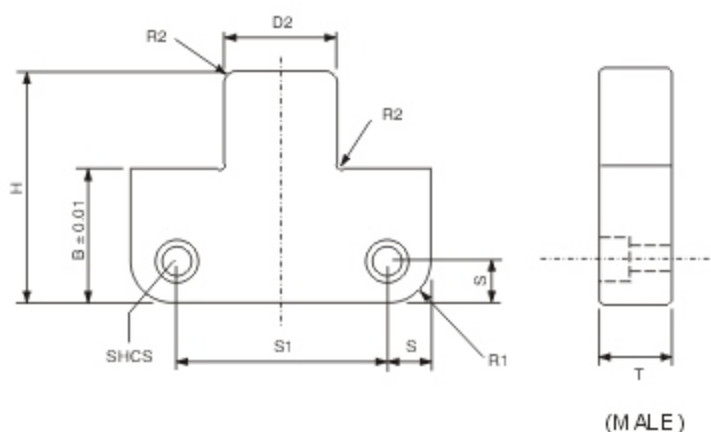
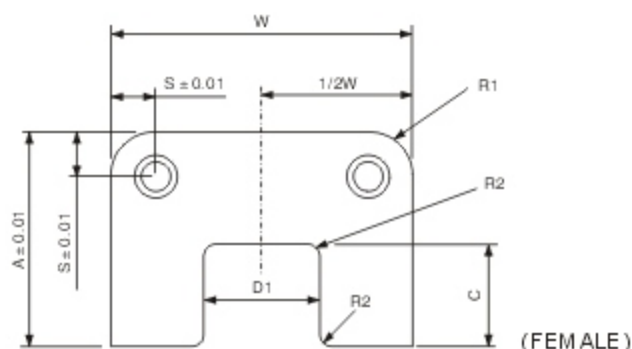
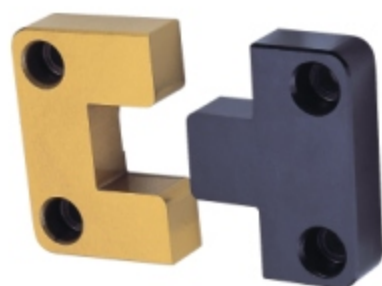
A +0.00 -0.01	B =0.1	C	D ₁ +0.005 -0.0025	D ₂ +0.005 -0.000	E =0.1	F	G =0.1	H	J	K	L	M	N	U DIA.	Weight (kg)
40	26 36	43 53	12	12	21.5	M6-1×20	11	8	13 18	8	16	5	8.5	6" (6D IA × 25 LG D WL)	0.35 0.40
50	26 36	43 53	17	17	21.5	M6-1×20	11	8	13 18	8	16	5	8.5	6" (10D IA × 30 LG D WL)	0.43 0.50
75	26 36	51 61	25	25	36	M10-1.5×25	18	12.5	13 18	12.5	19	5	14	10" (10D IA × 30 LG D WL)	1.10 1.21
100	36 46	71 81	35	35	45	M10-1.5×25	22	15	18 13	15	19	5	20	10" (10D IA × 30 LG D WL)	1.88 2.03
125	36 46	71 81	45	45	45	M10-1.5×30	22	20.5	18 23	20.5	25	5	20	12" (12D IA × 30 LG D WL)	3.10 3.34

TYPE: JC33 (INCH STANDARD)

A +0.0000 -0.0004	B =0.004	C	D ₁ +0.0000 -0.0002	D ₂ +0.0002 -0.0000	E =0.004	F	G =0.004	H =0.004	J	K	L	M	N	U DIA.	Weight (kg)
1.5000	0.850 1.350	1.470 1.970	0.5000	0.5000	0.870	1/4-20 ×3/4	0.281	0.281	0.425 0.675	0.281	0.620	0.19	0.310	2500 (1/4D IA ×1" LG. DWL)	0.31 0.37
2.0000	0.850 1.350 0.850	1.470 1.970 1.950	0.6800	0.6800	0.870	1/4-20 ×3/4	0.375	0.375	0.425 0.675 0.425	0.375	0.620	0.19	0.310	2500 (1/4D IA ×1" LG. DWL) 3750	0.41 0.49 1.03
3.0000	1.350	2.450	1.0000	1.0000	1.370	3/8-16 ×1	0.688	0.375	0.675	0.375	0.745	0.19	0.550	3750 (3/8D IA ×1-1/4" LG. DWL)	1.18
4.0000	1.350 1.850	2.890 3.390	1.3750	1.3750	1.870	3/8-16 ×1	0.875	0.625	0.675 0.925	0.625	0.745	0.50	0.770	3750 (3/8D IA ×1-1/4" LG. DWL)	1.95 2.15
5.0000	1.350 1.850	2.890 3.390	1.7500	1.7500	1.870	1/2-13 ×1-1/4	0.875	0.750	0.657 0.925	0.750	1.120	0.50	0.770	5000 (1/2D IA ×2" LG. DWL)	3.67 4.03

Order Example: -
 -

■ Customize are also available



Type: JC34

Female Material: SKD11 Tool Steel
 Surface Hardness: HRC80+/-2
 (Titanium Nitriding Coated)

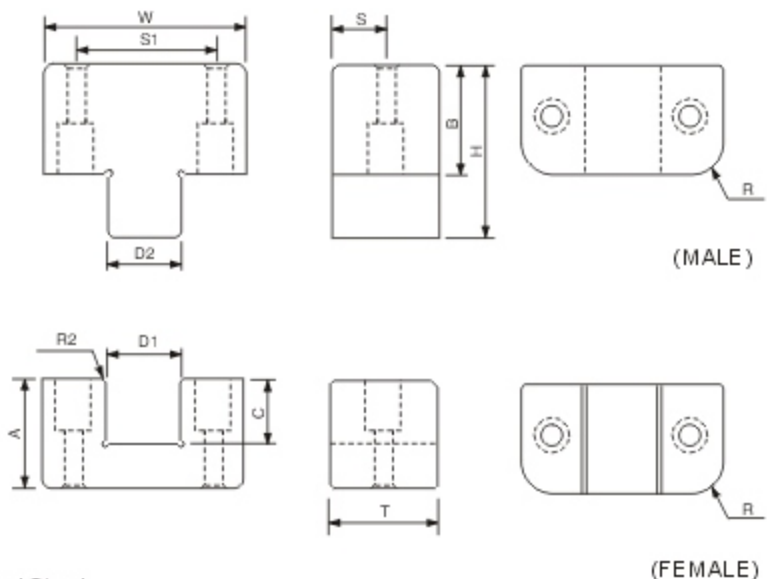
Male Material: YK30 Tool Steel
 Hardness: HRC58+/-2
 (Black Oxidized)

(INCH STANDARD)

Type No.	W $0_{-0.0005}$	T ± 0.001	A ± 0.001	B ± 0.010	C	D1 $0_{+0.0003}$	D2 $0_{-0.0003}$	H	R1	POCKET RADIUS	R2	S ± 0.01	S1	SHCS
JC34-37	1.0000	0.375	1.125	0.875	0.53	0.5000	0.4999	1.37	0.22	3/16	0.06	0.250	0.500	#10-32X1/2"
JC34-49	1.2500	0.490	1.125	0.875	0.66	0.5000	0.4999	1.50	0.22	3/16	0.06	0.250	0.750	#8-32X5/8"
JC34-50C	1.5000	0.500	0.875	0.875	0.56	0.5630	0.5629	1.40	0.22	3/16	0.06	0.250	1.000	#8-32X5/8"
JC34-50	2.0000	0.500	1.375	0.875	0.66	0.7500	0.7499	1.50	0.22	3/16	0.06	0.312	1.376	#10-32X5/8"
JC34-75	3.0000	0.750	1.875	0.875	1.13	1.2500	1.2499	1.96	0.28	1/4	0.12	0.375	2.250	1/4-20X3/4"
JC34-100	4.0000	1.000	2.375	1.375	1.25	1.5000	1.4999	2.59	0.53	1/2	0.12	0.500	3.000	3/8-16X1"
JC34-125	5.0000	1.250	2.875	1.375	1.63	2.0000	1.9999	2.96	0.53	1/2	0.12	0.625	3.750	1/2-13X1 1/4"
JC34-150	6.0000	1.500	2.875	1.375	1.75	2.5000	2.4999	3.09	0.53	1/2	0.12	0.625	4.750	1/2-13X1 1/2"

Order Example:

Customize are also available



Type: JC35

Female Material: SKD11 Tool Steel
 Surface Hardness: HRC80+/-2
 (Titanium Nitriding Coated)

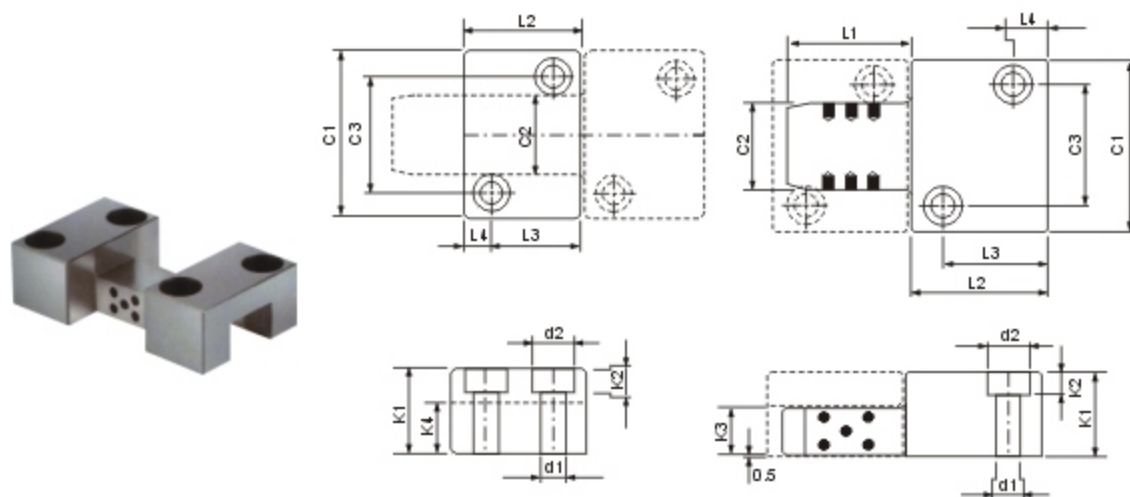
Male Material: YK30 Tool Steel
 Hardness: HRC58+/-2
 (Black Oxidized)

(INCH STANDARD)

Type No.	W	T	A	B	C	OVERALL HEIGHT	D1	D2	H	R	R2	S	S1	SHCS	
	$\begin{matrix} 0 \\ -0.0005 \end{matrix}$	$\begin{matrix} 0 \\ -0.002 \end{matrix}$	$\begin{matrix} +0 \\ -0.002 \end{matrix}$	$\begin{matrix} +0 \\ -0.002 \end{matrix}$			$\begin{matrix} +0.0002 \\ 0 \\ -0.0002 \end{matrix}$	$\begin{matrix} 0 \\ -0.0002 \end{matrix}$						± 0.010	± 0.010
JC35-125	1.250	0.625	0.625	0.500	0.414	1.125	0.438	0.438	0.875	0.26	0.059	0.312	0.875	#6-32X1/2"	#6-32X5/8"
JC35-150	1.500	0.875	0.875	0.750	0.531	1.625	0.500	0.500	1.25	0.26	0.059	0.437	1.000	#8-32X3/4"	#8-32X3/4"
JC35-200	2.000	1.000	1.125	0.750	0.664	1.875	0.750	0.750	1.375	0.38	0.059	0.500	1.375	#10-32X3/4"	#10-32X1"
JC35-300	3.000	1.125	1.500	0.750	0.787	2.250	1.125	1.125	1.500	0.51	0.098	0.562	2.250	1/4-20X3/4"	1/4-20X1 1/2"

Order Example:

■ Customize are also available



Type: JC36

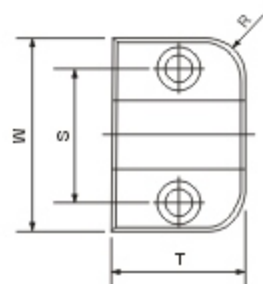
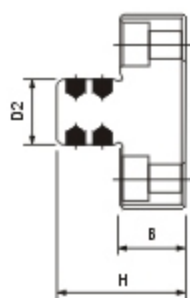
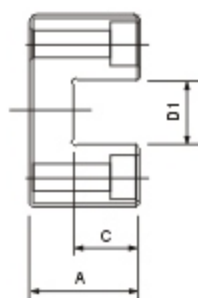
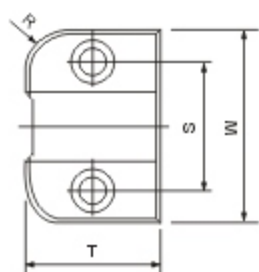
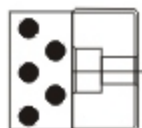
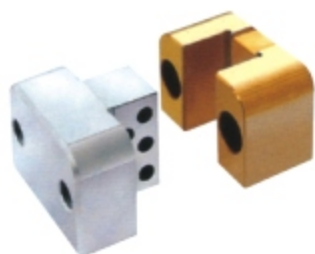
Material: YK30 Tool Steel+Graphite

Hardness: HRC58+/-2

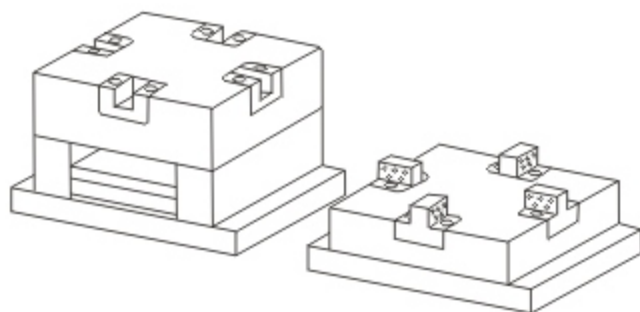
C2 g5	L1	K4	K3	K2	K1	d2	d1	L4	L3	L2 _{0.5} 0.7	C3	C1
16	20	12	11	6.8	20	11	6.6	7	15	22	26	40
	40											
20	25	14	13	6.8	22	11	6.6	7	19	27	31	45
	50											
25	32	15	14	6.8	25	11	6.6	9	27	36	35	50
	63											
32	40	20	19	9.0	32	15	9.0	11	35	46	45	63
	80											
40	50	23	22	11.0	36	18	11.0	15	40	56	60	85
	100											
50	56	25	24	13.0	40	20	14.0	18	48	66	74	100
	112											
125	140	63	62	21.0	112	32	22.0	25	135	150	110	160

Order Example: - -
 - -

■ Customize are also available



Diagram



Type: JC37

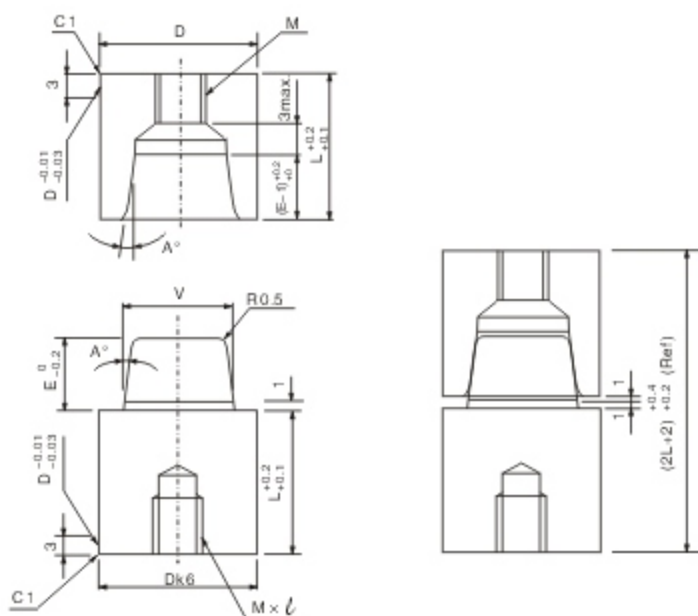
Female Material: SKD11 Tool Steel
Surface Hardness: HRC80+/-2
(Titanium Nitriding Coated)

Male Material: YK30 Tool Steel+Graphite
Hardness: HRC58+/-2

W 0 -0.01	T 0 -0.1	A 0 -0.05	B 0 -0.05	C ±0.1	D1 +0.010 +0.005	D2 0 -0.005	H 0 -0.1	R	S	SHCS
35	26	25	15	14.5	11	11	29	8	23	M5
45	30	25	15	14.5	15	15	29		30	M6
55	36	30	20	19.5	20	20	39		37.5	M8
75	36	35	20	24.5	30	30	44		52	M10
100	45	60	20	39.5	40	40	59		70	M10
125	50	60	25	54.5	60	60	79		92.5	M14

Order Example: -
 -

■ Customize are also available



Type: JC38

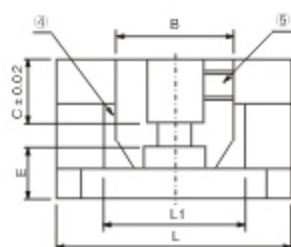
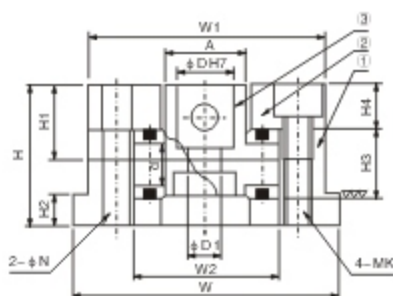
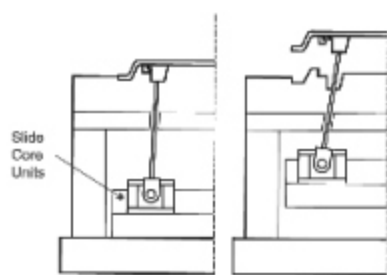
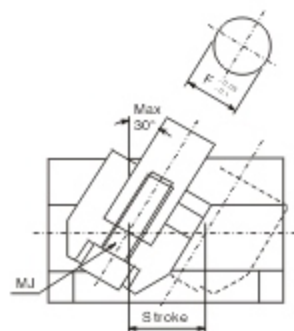
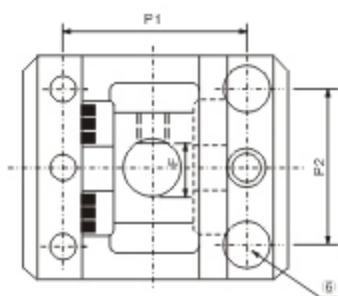
Material: SKD11 Tool Steel

Hardness: HRC58+/-2

D	Dk6	A°	L	V	E	M x l
13	+0.012	5°	14	7	6	M4 x 10
16	+0.001		14	10	6	M5 x 10
20	+0.015 +0.002		19	13	9	M6 x 12
25			24	16	12	M8 x 16
30			29	20	15	M10 x 20
32	+0.018		29	20	15	M10 x 20
35	+0.002		34	24	18	M12 x 24

Order Example: -
 -

■ Customize are also available



Type: JC39

Material: CK45 Black Oxidized Coating + Bronze Graphite Slide

φD	φd	φD1	A	B	C	E	F	MJ	H	H1	H2	H3	H4	L	L1	W	W1	W2	P1	P2	MK	φN	Stroke
8	7	4.5	11	20	8	10	7	M4	22	12.5	5	11	7	32	20	33	30	19	24	20	M3	3	10
10	7	5.5	15	25	10	12.5	8	M5	27	15.5	5	15	8	45	25	45	40	25	32	30	M4	4	18
12	10	7	17	25	12	15	11	M6	32	18	7	16	10	50	30	57	51	31	39	35	M6	6	20
16	12	9	22	30	16	15	14.5	M8	36	20	8	20	10	65	40	65	58	38	46	40	M6	6	25
20	14	11	26	40	20	16	18	M10	42	23	11	22	12	80	50	80	72	44	56	55	M8	8	30
25	16	14	32	45	25	17	22.5	M12	50	28	15	26	15	90	55	93	85	52	66	65	M10	10	35
30	18	14	38	50	30	17	27	M12	55	30	15	30	15	100	60	101	93	60	74	70	M10	10	40
35	20	14	45	60	35	18	32	M12	62	35	15	34	18	120	75	120	110	70	85	80	M12	10	45
40	25	18	55	70	40	19	36	M16	70	40	15	44	18	135	85	130	120	80	95	90	M12	10	50
45	30	18	60	80	45	24	40	M16	80	45	15	50	20	150	95	140	130	90	105	110	M12	10	55

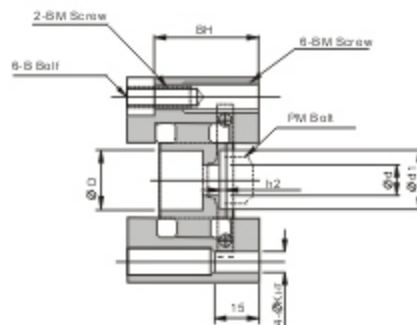
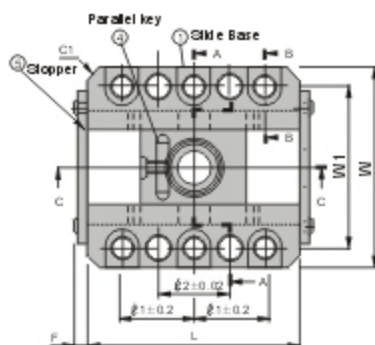
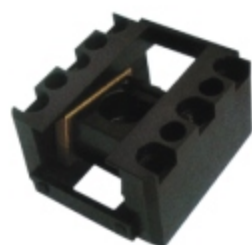
Accessory parts

No.	Description	Quantity	Material
1	Slide base	1	S50C
2	Upper plate	2	S50C
3	Pin holder	1	S50C
4	Slide plate	2	HBsC4+Graphite
5	Anti-tum pin	1	SCM435
6	Socket head screw	4	SCM435

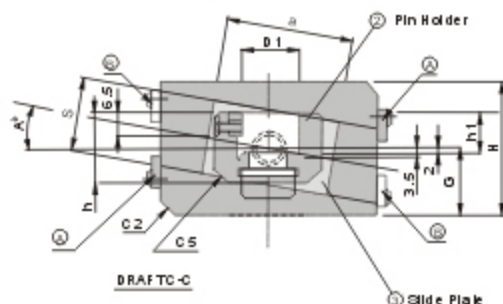
Order Example: -
 -

■ Customize are also available

Inclined Core Unit (Fixed Type) - Regular



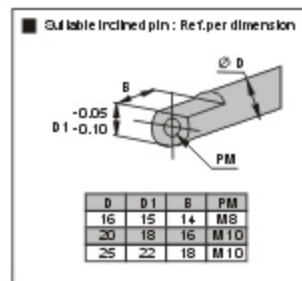
DRAFT A-A



DRAFT C-C



DRAFT B-B



Type: JC40

Material: CK45 Black Oxidized Coating + Bronze Graphite Slide

※ (A) (B) Mark the position for stopper, please refer to A.

Catalog No.		A°	W	W1	L	L1	L2	H	G	h1	a	S	B
Type	D												
JC40	16	0°~10°	56	46	65	25	25	36	18	11	40	20	M6
	20		64	52	70	25	25	40	20	13	40	24	M6
	25		71	59	80	30	30	45	22.5	15	45	26	M6

Catalog No.		BH	BM	K	D1	d	d1	h2	C1	C2	F	Position for Stopper	
Type	D											(A)	(B)
JC40	16	29.5	M8	6	15	9	16	3	4	-	4.65	0°~10°	—
	20	33.5	M8	8	18	11	20	5.5	3	4		3°~10°	0°~2°
	25	38.5	M8	8	22	11	20	5.5	5	5		4°~10°	0°~3°

Accessory parts

No.	Description	Quantity	Material
1	Slide Base	2	S50C
2	Pin Holder	1	SCM440
3	Slide Plate	2	CAC304+Graphite
4	Parallel Key	1	S45C
5	Stopper	2	SS400

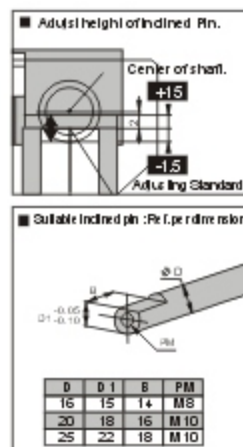
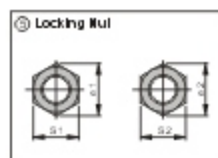
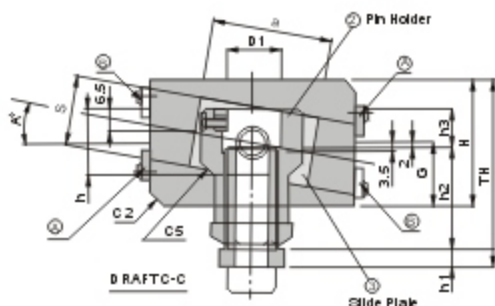
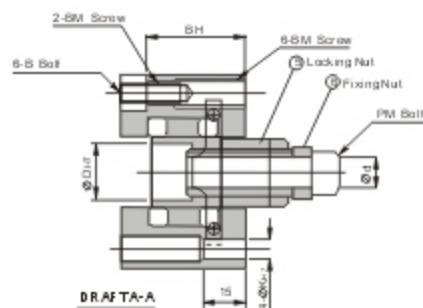
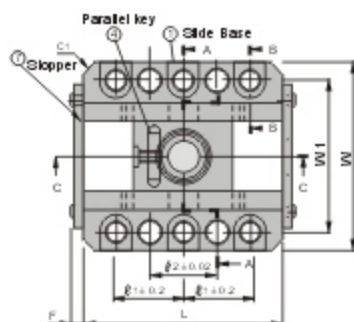
Features: 1. Smoothly move during operation.

2. move within μ , reduce worn-out of track and slide plate.

Order Example: - -
 - -

■ Customize are also available

Inclined Core Unit (Adjustable Type) - Regular



Type: JC41

Material: CK45 Black Oxidized Coating + Bronze Graphite Slide

※ (A) (B) Mark the position for stopper, please refer to A°.

Catalog No.		A°	W	W1	L	l1	l2	H	h1	h2	TH	G	h3	a	S
Type	D														
JC41	16	0°~10°	56	46	65	25	25	36	6	33	59	18	11	40	20
	20		64	52	70	25	25	40	6	36	64	20	13	40	24
	25		71	59	80	30	30	45	6	39	69.5	22.5	15	45	26

Catalog No.		S1	e1	S2	e2	B	BH	BM	K	D1	d	C1	C2	F	Position for Stopper	
Type	D														(A)	(B)
JC41	16	21	24.2	16	18.5	M6	29.5	M8	6	15	9	4	-	4.65	0°~10°	—
	20	24	27.7	19	21.9	M6	33.5	M8	8	18	11	3	4		0°~10°	0°~2°
	25	24	27.7	19	21.9	M6	38.5	M8	8	22	11	5	5		4°~10°	0°~3°

Accessory parts

No.	Description	Quantity	Material
1	Slide Base	2	S50C
2	Pin Holder	1	SCM440
3	Slide Plate	2	CAC304+Graphite
4	Parallel Key	1	S45C
5	Lock Nut	1	S45C
6	Adjusting Rod	1	S45C
7	Stopper	2	SS400

Features: 1. Self-alignment function

It is an undercut disposal of slant pin-holders unit with an undercut angle to be various by a swivel function for inclined pins.

2. Durability improvement of a slide surface

It is superior in wear proof or seizing resistance to adopt an oilless bearing to a slide plate.

3. Substantiality of the series

It is level, angulation and inclined pin full length and no adjustment types plans substantiality of these series.

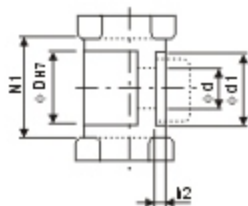
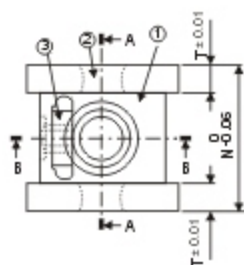
Order Example: Type - D - A°
JC41 - 16 - 2°

Customize are also available

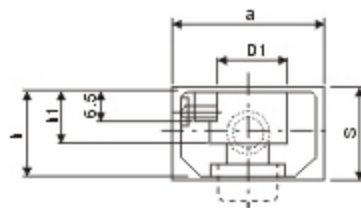
Inclined Pin Holder



(Fixed Type)



DRAFT A-A



DRAFT B-B

Item	Accessory Parts	Material	Quantity
1	Inclined Pin Holder	SCM440	1
2	Slide Plate	CAC304+Graphite	2
3	Parallel Key	S45C	1

Type: JC42

Material: SCM440 Black Oxidized Coating + Bronze Graphite Slide

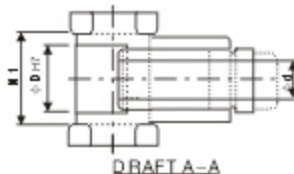
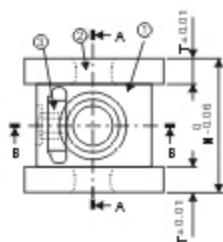
D	D1	d	h	h1	h2	h3	N	N1	S	a	T
12	11	5.5	16	6	33	10	30	17	20	35	6.5
16	15	9	18	6	33	11	33	20	20	40	6.5
20	18	11	22	6	36	13	38	25	24	40	6.5
25	22	11	26	6	39	15	45	31	26	45	7
30	27.5	11	30	6	41	17	51	36	30	55	7.5

Order Example: Type - D
JC42 - 12

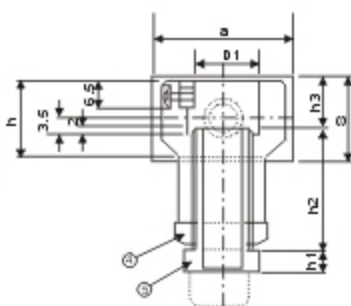
Customize are also available



(Adjustable Type)



DRAFT A-A

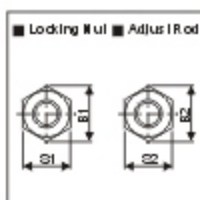
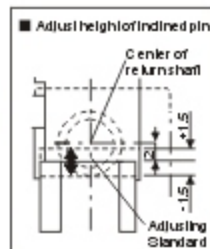


DRAFT B-B

Type: JC43

Material: SCM440 Black Oxidized Coating + Bronze Graphite Slide

Item	Accessory Parts	Material	Quantity
1	Inclined Pin Holder	SCM440	1
2	Slide Plate	CAC304+Graphite	2
3	Parallel Key	S45C	1
4	Locking Nut	S45C	1
5	Adjust Rod	S45C	1



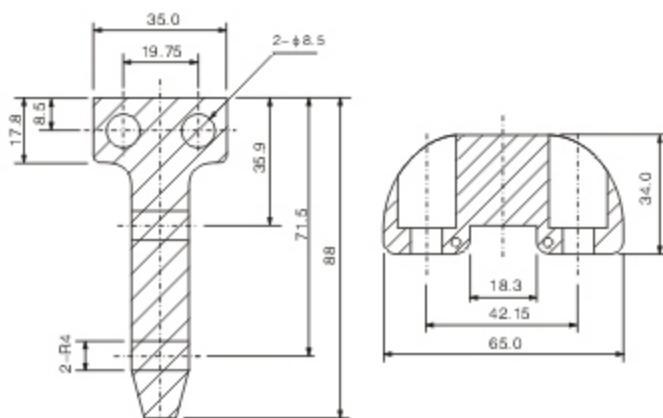
D	D1	d	h	h1	h2	h3	N	N1	S	a	T	S1	e1	S2	e2
12	11	5.5	16	6	33	10	30	17	20	35	6.5	17	19.6	12	13.9
16	15	9	18	6	33	11	33	20	20	40	6.5	21	24.2	16	18.5
20	18	11	22	6	36	13	38	25	24	40	6.5	24	27.7	19	21.9
25	22	11	26	6	39	15	45	31	26	45	7	24	27.7	19	21.9
30	27.5	11	30	6	41	17	51	36	30	55	7.5	24	27.7	19	21.9

Order Example: Type - D
JC43 - 12

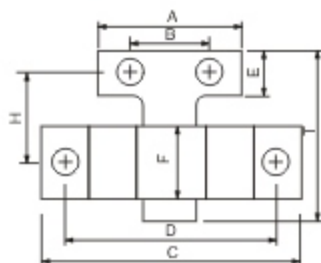
Customize are also available



(JC46-Moon Type)



(JC47-Short Type)



Type: JC46 & JC47

Material: JC 46-SUS404-Stainless Steel

JC 47-SCM21-Chrome Molybdenum Steel

Hardness: JC 46-HRC50+/-2

JC 47-HRC55+/-5

Characteristic:

1. Based on its simple and easy design, the slide lock makes molds open and close completely, and it also makes installation and interchanging seem effortless.
2. Excellent for 3 plate mold and for its precision injection (for example: needle-point injection). It will cut off the excessive materials and leave the mold at the time of finishing.
3. 4 Different styles to choose from:
 - JC47-2: Good for molds less than 5 oz
 - JC47-3: Good for medium size molds
 - JC47-4: Good for large size molds
4. It is well-known for its exceptional quality and was made by imported springs, heat-treated and grinded alloy steels.

Type No.	A	B	C	D	E	F	H	T	Thread⊕	Pulling res. kg
JC47-2S	40	26	72	60	20	20	23	49	M8	250
JC47-2L	36	22					66	96		
JC47-3S	50	30	113	90	22	30	38	73	M10	300
JC47-3L							79	118		
JC47-4S	50	30	113	90	22	30	98	73	M12	400
JC47-4L					25		103	135		

※PLEASE SPECIFY THE TYPE NO. DUE TO THE DIFFERENT MATERIAL.

Order Example:

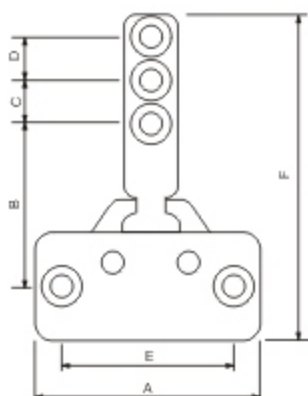
■ Customize are also available



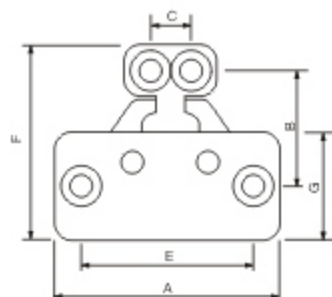
D-TYPE

Type: JC48

Material: SK2, Tool Steel
Hardness: HRC58+/-2



JC48-1



JC48-2

Type No.	A	B	C	D	E	F	G	Pull res.	Thread
JC48-1	78	58	15	15	60	116	38	500KG	5/16"
JC48-2	78	40	15	-	60	68	38	500KG	5/16"

Order Example:

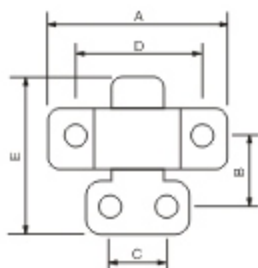
■ Customize are also available



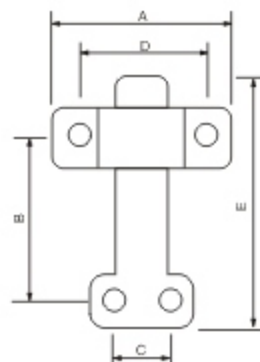
R-TYPE

Type: JC49

Material: SK2, Tool Steel
Hardness: HRC58+/-2



JC49-1

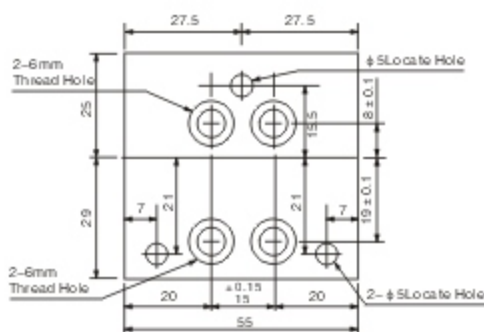


JC49-2

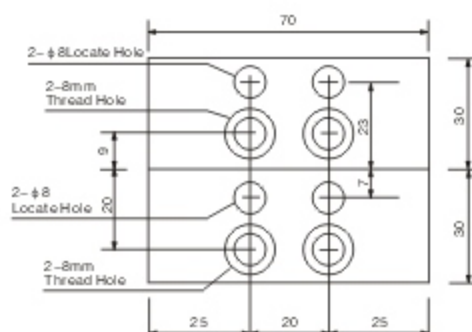
Type No.	A	B	C	D	E	Pull res.	Thread
JC49-1	62	28	20	45	54	400KG	5/16"
JC49-2	62	62	20	45	88	400KG	5/16"

Order Example:

■ Customize are also available



(STANDARD FOR 100kg,200kg,300kg)



(STANDARD FOR 600kg)

Type: JC50

Material: SCM21, Chrome Molybdenum Steel

Hardness: HRC55+/-5

Characteristic:

1. Excellent for 3 plate mold and for its precision injection (for example: needle-point injection). It will cut off the excessive materials and leave the mold at the time of finishing (especially good for double-color injection)
2. Slide lock was made by precision casting methods. Hanger was made by the both sides that make the lock slide can endure over 100,000 times of usage.
3. When assemble the slide lock, line up both sides evenly, then using 5mm reamer to ream.

4. 2 different sizes with 4 different mold clamping force:

JC50-100 with mold clamping force up to 100kg

JC50-200 with mold clamping force up to 200kg

JC50-300 with mold clamping force up to 300kg

JC50-600 with mold clamping force up to 600kg

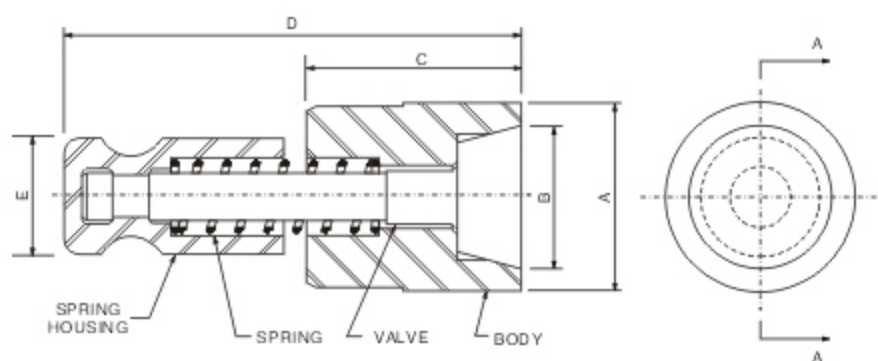
Can be used for more than 2 sets of Slide Locks when install into larger molding machines.

Type No.	Kg
JC50	100
	200
	300
	600

Order Example: -

-

■ Customize are also available



Type: JC51

Material: Stainless Steel

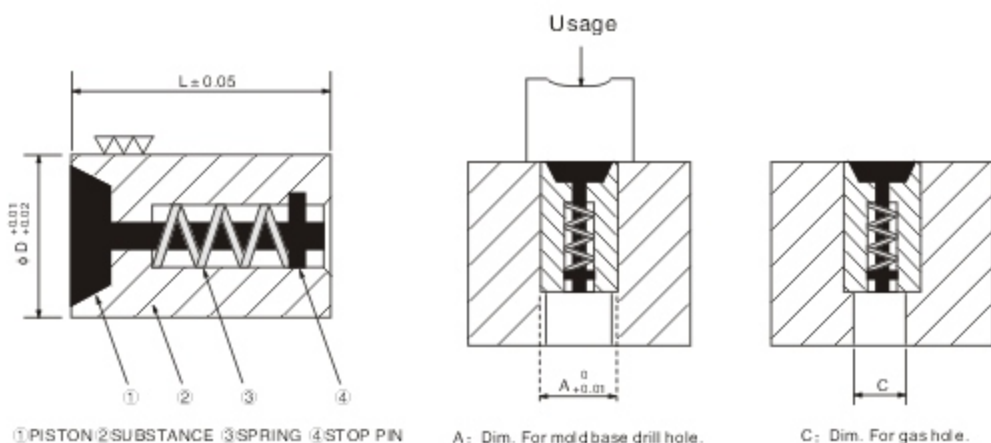
Hardness: HRC55+/-2

A	B	C	D	E
8	6.6	11	24	6
12	9.7	18	34	8
18	14.8	22	45.5	12

Order Example: Type - A

JC51 - 8

■ Customize are also available

**Type: JC52**

Material: SUS416 Stainless Steel

Hardness: HRC55+/-2

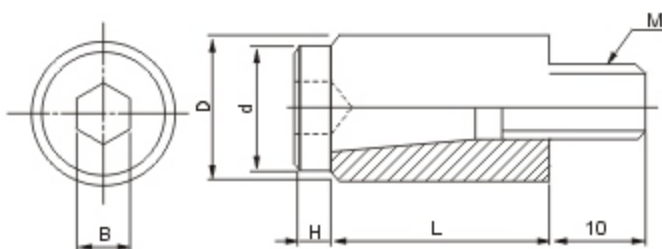
Characteristic:

1. It is used under the vacuumed condition in the deep and closed molds. It can be used for having problems with ejection from ejector pin and for the larger size of final products, which has difficulty for separating the molds.
2. Easy installation, high precision and space saver.
3. Using air valves to control the operation and the final products can leave the molds instantly.
4. Air-jet valves are made from stainless steels and it will never rust.
5. Air-jet valves are one of the most innovated tools for the molding industries. It will improve the problems for molds design and injection troubles.

$D_{+0}^{+0.02}$	L	$A_{-0.01}^0$	C
8	15	8	4.5
10	20	10	6
12	25	12	8
16	30	16	10
20	30	20	12
25	30	25	15
30	30	30	20

Order Example: Type - D
JC52 - 8

■ Customize are also available



Type: JC53

Material: SCM435 Chrome Molybdenum Steel+POM

Hardness: HRC55+/-2

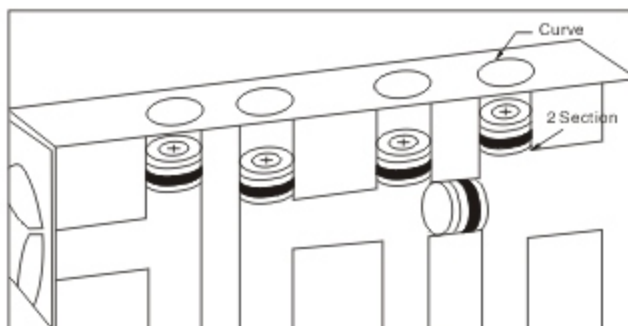
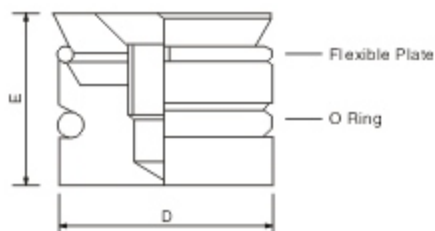
Characteristic:

1. Use sloping screw to adjust mold plate and parting locks, then turn 90 degrees, parting locks can be closed up to 50,000 times.
2. Easy to assemble and disassemble, and cost efficient.
3. Can also be installed into small, medium size, and 2-sectional injecting metal pipes, or can be installed on sliding bases.
4. Mold weight < 100kg, using 4pcs of $\phi 12$
 Mold weight < 500kg, using 4pcs of $\phi 16$
 Mold weight < 1,000kg, using 4pcs of $\phi 20$
 Mold weight > 1,000kg, using at least 6 pcs.
5. Insert parting locks into die mold about 3cm, then using H7 reamer to process mold hole within +0.1 mm range.
6. Process mold surface to the shape of letter R, if processing to the chamfering of letter C, it will shorten its life cycle.
7. Do not add any oil on parting locks, doing so will reduce the friction.

ϕD	ϕd	H	L	M	B
10	8.5	3	18	M5	4
12	11	3.5	20	M6	5
13	11	3.5	20	M6	5
16	14	4	25	M8	6
20	16	5	30	M10	8

Order Example: - -
 - -

■ Customize are also available



Usage Area

Type: JC54

Material: C3604 Brass

Hardness: HB90~120

Characteristic:

Based on the water flow directions to any cooling and heating systems which will increase the fitting function in the plastic molds.

Know how:

1. when installing into molds, please make sure the space is at least 0.1mm wider than cooling circuit plugs.
2. if there is no setting for the cooling circuit plugs: first release, then using the air spray to reset.

Theory:

According to sloping method, the o-ring and springs will enlarge to fit the cooling circuit plugs.

Loading capacity:

- 8mm cooling circuit plugs for over 16kg/cm²
- 10mm cooling circuit plugs for over 17 kg/cm²
- 12mm cooling circuit plugs for over 19kg/cm²

Specialty:

1. No tapping, no rust
2. Can be adjusted for tightness
3. Can be placed at any water path and moved accordingly.
4. Can be cooling down or heating up by water or oil.
5. Under normal operating temperature: -5~+135°C
6. Special operating temperature: -10~+280°C

D	E
08	10
10	11
12	12
16	14
20	16
25	18

Order Example: -
 -

■ Customize are also available



(Hole dim.: 0.05)



(Hole dim.: 0.35)

JC55–Stainless Steel(Injection Mold)
 JC56–Brass(Blow Mold)

Type: JC55 & JC56

Material: Stainless Steel & Brass

Hardness: JC 55-R V50

JC 56-R V20

In order to achieve its maximum molding productivities, simply using its ultra micro breathing cell to exhale gas and air from molds.

Common questions:

1. Burnt:

When aberration and burnt issues occurred, it is because resin is filling faster than air exhaling which will result gas vent to overheat.

2. Overflow:

There are 2 possible conditions:

- When temperature of resin gets higher at the tip of seaming, it weakens its bonding strength.
- Air can filled up the path and blocks resin to flow functionally which will cause ejection pressure to rise and materials to overflow.

3. Not enough fillings:

Due to air pressure, it reduces the ratio of the filling speed. even there is no any sign of burnt or overflow.

4. Cell streak:

If there are some cells, streaks and mottles occurred, it is because the cells have not been vaporized completely between air and resin.

5. Extensive cycling time:

The higher temperature of resin molds will slower the speed of injection and cause extensive cycling time, however, it will not affect the quality of final products.

Entry time and cost saver:

1. It will reduce the trial die, time and materials if users consider to use TX gasvent the beginning of the design.
2. It will save up to 1/3 to 1/10 of the total cost and time when installing gasvent

Installation:

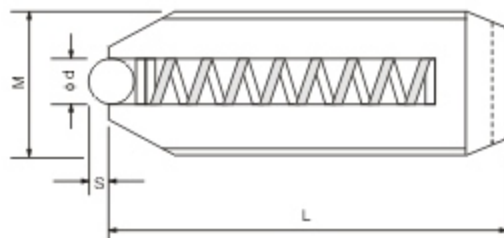
1. Do not touch the surface when gasvent is in use.
2. Use H7/s6 from JIS reference chart.

※PLEASE NOTICE THE DIFFERENT MATERIAL WITH DIFFERENT TYPE CODE WHEN ORDERING

D	L
4	4.5
5	10
6	10
8	10
10	10
12	12

Order Example: -
 -

■ Customize are also available



Type: JC57 & JC58

Material: SCM21 Chrome Molybdenum steel (Structure)
 SUJ2 High Carbon Chrome Bearing Steel (Ball)
 Hardness: HRC55+/-5

(METRIC STANDARD)

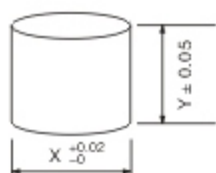
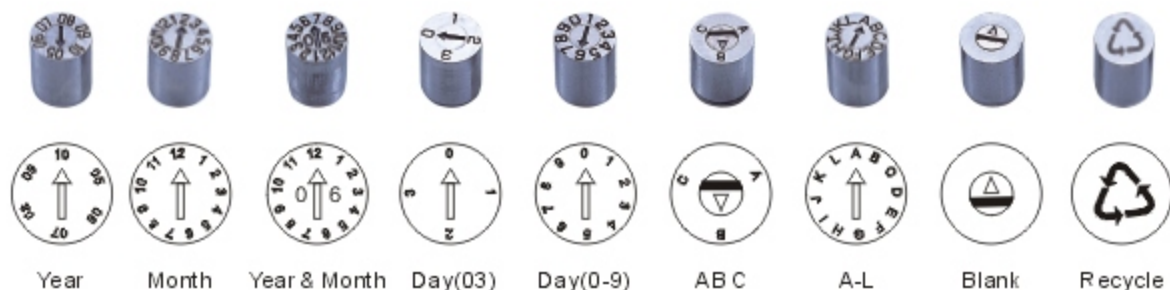
Type No.	M × Pitch	φ d	S	L	Load Capacity	
					min	max
JC57-4	4 × 0.7	2.5	1.0	9	0.3	1.0
JC57-5	5 × 0.8	3.0	1.0	12	0.5	1.5
JC57-6	6 × 1.0	3.5	1.2	14	0.7	2.0
JC57-8	8 × 1.25	5.0	1.8	16	0.9	2.5
JC57-10	10 × 1.5	6.0	2	19	1.0	3.0
JC57-12	12 × 1.75	8.0	3	22	1.6	5.0
JC57-16	16 × 2.0	10.0	4	25	2.5	8.0

(INCH STANDARD)

Type No.	SCREW (inch)	φ d	S	L	Load Capacity	
					min	max
JC58-2 1/2	5/16	5	2	17	1.3	2.6
JC58-3	3/8	6	2	17	1.0	3.0
JC58-4	1/2	8	3	17	1.6	5.0

Order Example:

■ Customize are also available

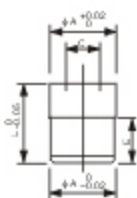


X	4	5	6	8	10	12	16	20	30
Y	6	8	8	10	10	12	14	14	25

Type: JC59-1

Material: SUS420 Stainless Steel
Hardness: 50+/-2

Type No.	X	Option(Engraving Characters)
JC59-1	4	① Year ② Month ③ Year + Month
	5	
	6	
	8	
	10	④ Day(0-3) ⑤ Day(0-9) ⑥ Day(1-31)
	12	
	16	⑦ Letter "ABC" ⑧ A-L ⑨ Blank
	20	
	30	⑩ Recycle



Type: JC59-2

Material: SUS420 Stainless Steel
Hardness: 50+/-2

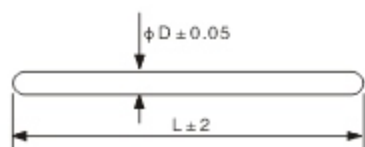
Type No.	φA	C	E	L
JC59-2	6	3.0	4	8
	8	4.0	6	10
	10	5.0	8	10
	12	6.0	10	12
				12

*PLEASE SPECIFY YOUR OPTION WHEN ORDERING.

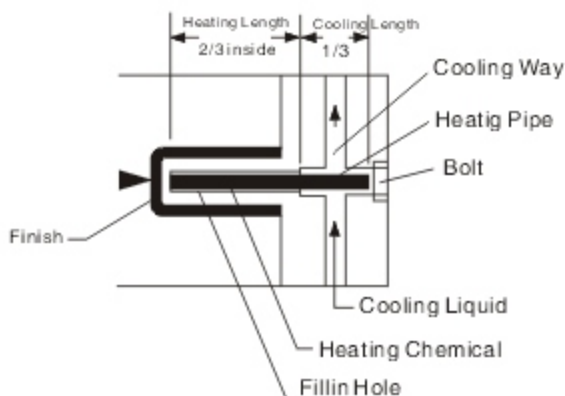
Order Example: Type - X - Option
JC59-1 - 4 - ③

Order Example: Type - A - L - Option
JC59-2 - 6 - 8 - ②

■ Customize are also available
■ Insert removable with spring are also available



Standard Filling Area



Type: JC60

Material: Brass + Cooling Liquid

Advantages:

1. Can save at least 30% of molding cycle. (super absorbency and cool down time)
2. Less cull in molding products. (can prevent the final products from shrinkage and deformation.)
3. Produce highly accurate final molding products (preventing water from boiling)
4. Outstanding surface on the final products. (avoid any water waste)
5. Can prevent color from inconsistency. (endure long-hour operating time)
6. Help maintaining molds and reducing labor cost.
7. Simply add heatsink to improve molds function.

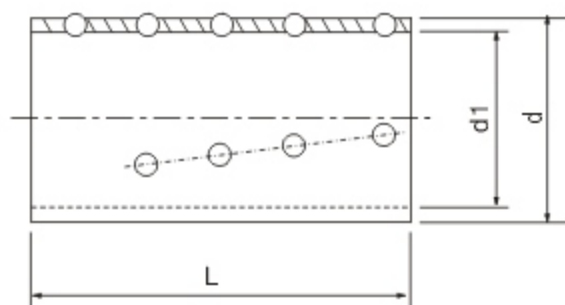
Installation:

1. When installing into molds, please make sure the space is at least 0.1mm to 0.2mm wider than heatsink.
2. After installing, please use fitters to fill the gap.
3. Leave at least twice of the hole space for water cooling path.
4. For safety, please insert at least 1/3 of heatsink into molds.

D	L
3	40-300
4	
5	
6	
8	

Order Example: - -
 - -

Customize are also available



Type: JC61

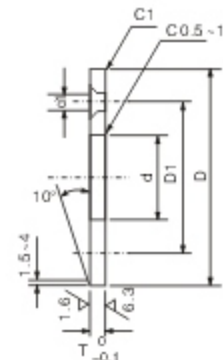
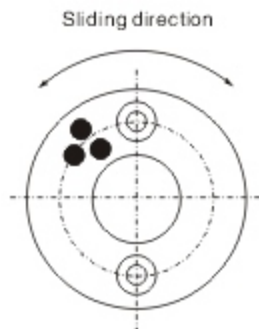
Material: C3604 Brass

SUJ2 High Carbon Chrome Bearing Steel

Type No.	L										d1	d	Ball Dia.	
	25	30	35	40	45	50	55	60	65	70				
JC61	8	●	●									8.5	11.5	2
	10	●	●									10.5	13.5	
	13				●		●					13.5	16.5	
	16			●	●		●					16.5	19.5	
	20			●	●		●					20.5	23.5	
	25			●	●		●					25.5	28.5	
	30			●	●		●					30.5	33.5	

Order Example: Type - L
JC61-8 - 30

Customize are also available



Type: JC62

Material: HBsC4 High Strength Brass+Graphite

Hardness: HB230~270

Base material CuZn24A16 Dynamic load 100N/mm²

Base hardness HB230~270 Friction(μ) <0.16

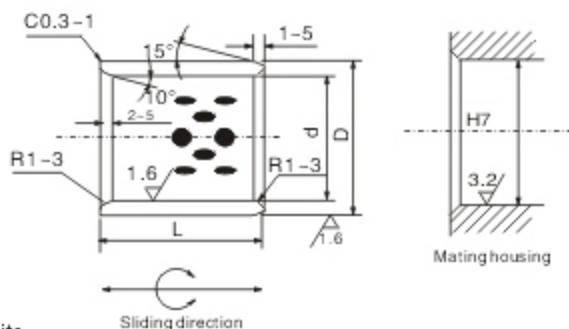
Temperature Max. 300°C Sliding velocity limit dry0.4m/s oil5m/s

d	D	T _{-0.1}	Bolt			
			D1	Q'ty	Size	d1
10.2 ^{+0.03}	30	3	—	—	—	—
12.2 ^{+0.03}	40		28	2	M3	3.5
13.2 ^{+0.03}			35			
14.2 ^{+0.03}			—	—	—	—
15.2 ^{+0.03}			35	2	M3	3.5
16.2 ^{+0.03}	50		5	—	—	—
18.2 ^{+0.03}		40		2	M5	6
20.2 ^{+0.03}	55	7	—	—	—	—
25.2 ^{+0.03}			40	2	M5	6
30.2 ^{+0.03}			45	2	M5	6
35.2 ^{+0.03}			50			
40.2 ^{+0.03}	80	8	60	2	M6	7
45.2 ^{+0.03}			70			
50.3 ^{+0.03}	100	10	75	4	M8	9
55.3 ^{+0.03}			85			
60.3 ^{+0.03}			90			
65.3 ^{+0.03}			95			
70.3 ^{+0.03}	130	10	100	4	M8	9
75.3 ^{+0.03}			110			
80.3 ^{+0.03}			120			
90.5 ^{+0.03}			140			
100.5 ^{+0.03}	190	10	160	4	M10	11
120.5 ^{+0.03}			175			

Order Example: Type - d
JC62 - 10.2

■ Customize are also available
■ Iron material are also available

Self Lubricating Bush - Without Flange -



Type: JC63

Material: HBs C4 High Strength Brass+ Graphite

Hardness: HB230~270

Base material CuZn24A16 Dynamic load 100N/mm²

Base hardness HB230~270 Friction(μ) <0.16

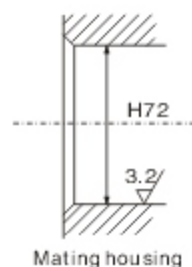
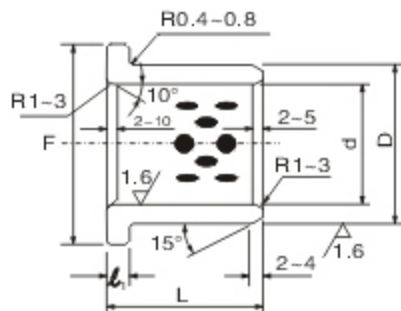
Temperature Max. 300°C Sliding velocity limit dry0.4m/s oil5m/s

d	D	L																		
		8	10	12	15	16	20	25	30	35	40	50	60	70	80	100	120	130	140	150
8	12	•	•	•	•															
10	14	•	•	•	•		•													
12	18		•	•	•	•	•	•	•											
13	19		•	•	•	•														
14	20		•	•	•		•	•	•											
15	21		•	•	•	•	•	•	•											
16	22		•	•	•	•	•	•	•	•	•									
18	24			•	•	•	•	•	•	•	•									
20	28		•	•	•	•	•	•	•	•	•	•								
22	32			•	•		•	•												
25	33			•	•	•	•	•	•	•	•	•	•							
30	38			•	•		•	•	•	•	•	•	•	•						
35	45						•	•	•	•	•	•	•	•						
40	50							•	•	•	•	•	•	•	•					
45	55								•	•	•	•	•	•	•					
50	60								•	•	•	•	•	•	•	•				
50	62								•	•	•	•	•	•	•	•				
50	65								•	•	•	•	•	•	•	•	•			
55	70									•	•	•	•	•						
60	74									•	•	•	•	•	•	•				
60	75									•	•	•	•	•	•	•	•			
63	75										•	•	•	•						
65	80										•	•	•	•						
70	85										•	•	•	•	•	•				
70	90											•	•	•	•					
75	90												•	•	•	•				
75	95													•	•	•	•			
80	96														•	•	•	•		
80	100															•	•	•	•	
90	110																•	•	•	•
100	120																	•	•	•
110	130																		•	•
120	140																			•
125	145																			•
130	150																			•
140	160																			•
150	170																			•
160	180																			•

Order Example: Type - d - L
JC63 - 8 - 8

Customize are also available
Iron material are also available

Self Lubricating Bush -With Flange-



Type: JC64

Material: HBs C4 High Strength Brass+ Graphite

Hardness: HB230~270

Base material CuZn24A16 Dynamicload 100N/mm²

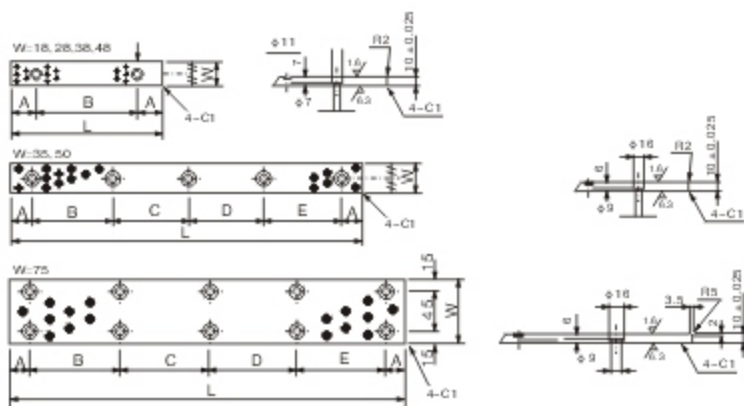
Base hardness HB230~270 Friction(μ) <0.16

Temperature Max. 300°C Sliding velocity limit dry0.4m/s oil5m/s

d		D		F	ε ₁ -0.10	L ^{-0.18}													
						15	20	25	30	35	40	50	60	80	100				
10	+0.028 +0.013	14	+0.036	22	2	●	●												
12	+0.034 +0.016	18	+0.018	25	3	●	●												
13		19		26		●	●												
14		20		27		●	●												
15	+0.041 +0.02	21	+0.043 +0.022	28	5	●	●	●	●										
16		22		29		●	●	●	●										
20		30		40		●	●	●	●		●								
25	+0.05 +0.025	35	+0.051 +0.026	45	7.5	●	●	●	●		●								
30		40				50		●	●	●	●	●	●						
31.5		40				60	●			●		●	●						
35	+0.06 +0.03	45	+0.062 +0.032	65	10				●		●	●							
40		50				70				●		●	●	●					
45		55				75					●		●	●	●				
50	+0.071 +0.036	60	+0.072 +0.037	80	10						●		●						
55		65				85							●		●				
60		75				90								●	●				
63	+0.083 +0.043	75	+0.083 +0.043	105	10									●					
70		85				110									●	●			
75		90				120										●	●	●	
80	+0.071 +0.036	100	+0.072 +0.037	130	10										●	●			
90		110				150										●	●	●	
100		120				170											●	●	●
120		140		170												●	●		

Order Example: Type - d - L
JC64 - 10 - 15

● Customize are also available
● Iron material are also available



Type: JC65

Material: HBs C4 High Strength Brass+Graphite

Hardness: HB230~270

Base material CuZn24A16 Dynamic load 100N/mm²

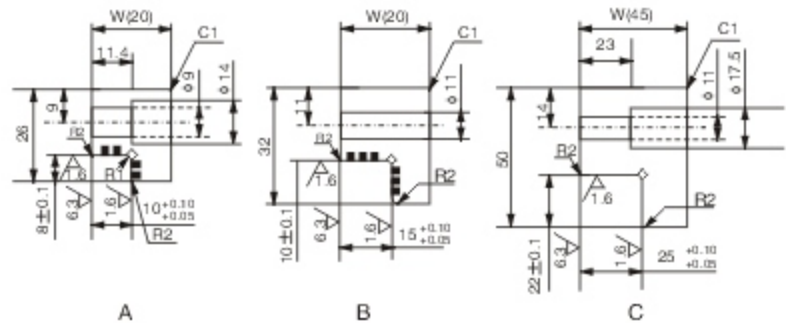
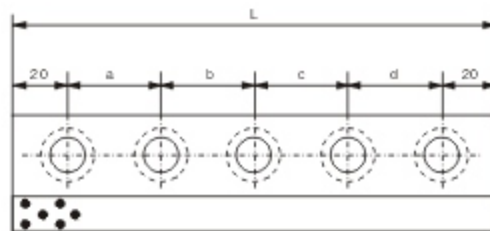
Base hardness HB230~270 Friction(μ) <0.16

Temperature Max. 300°C Sliding velocity limit dry0.4m/s oil5m/s

W	L	A	B	C	D	E	Flat Head Bolt	No. of Holes	
18	75	15	45				M6	2	
	100	25	50						
	125		75						
	150		100						
28	75	15	45				M6	2	
	100	25	50						
	125		75						
	150		100						
35	100	20	60				M8	3	
	150		55	55					
	200		55	50	55				
	250		70	70	70				
	300		65	65	65	65			
	350		80	75	75	80			
38	75	15	45				M6	2	
	100	25	50						
	125		75						
	150		100						
48	75	15	45				M6	2	
	100	25	50						
	125		75						
	150		100						
50	100	20	60				M8	3	
	150		55	55					
	200		55	50	55				
	250		70	70	70				
	300		65	65	65	65			
	400		90	90	90	90			
75	150	20	110				M8	4	
	200		80	80					
	250		105	105					
	300		85	85	85				
	400		120	120	120				
	500		115	115	115	115			

Order Example: Type - W - L
JC65 - 18 - 75

- Customize are also available
- Iron material are also available



Type: JC66

Material: HBs C4 High Strength Brass+Graphite

Hardness: HB230~270

Base material CuZn24A16 Dynamic load 100N/mm²

Base hardness HB230~270 Friction(μ) <0.16

Temperature Max. 300°C Sliding velocity limit dry0.4m/s oil5m/s

W	L	Bolt				Size	Q'ty	Above Sketch
		a	b	c	d			
20	100	60				M8	2	A
	150	55	55				3	
	200	55	50	55			4	
30	100	60				M10	2	B
	150	55	55				3	
	200	55	50	55			4	
	250	70	70	70			4	
45	200	55	50	55		M10	4	C
	250	70	70	70			4	
	300	65	65	65	65		5	
	350	80	75	75	80		5	

Order Example: - -
 - -

■ Customize are also available
 ■ Iron material are also available

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CONVERSION TABLE OF HARDNESS

Excerpt From SAE J417



Conversion table approximate values for steel according to Rockwell hardness C scale⁽¹⁾

Rockwell hardness C scale (HRC)	Vickers hardness (HV)	Brinell hardness (HB) Ball: 10mm in diameter/ Load: 3,000kgf		Rockwell hardness ⁽²⁾			Rockwell superficial hardness Diamond conical penetrator			Shore hardness (HS)	Tensile strength (Approximate value) Mpa (kgf/mm ²) (2)	Rockwell hardness C scale ⁽³⁾ (HRC)
		Standard ball	Tungsten carbide ball	A scale (HRA) Load: 60kgf Diamond conical penetrator	B scale (HRB) Load: 100kgf Ball of 1.6mm (1/16") dia.	D scale (HRD) Load: 100kgf Diamond conical penetrator	15-N Scale Load: 15kgf	30-N Scale Load: 30kgf	45-N Scale Load: 45kgf			
68	940	—	—	85.6	—	76.9	93.2	84.4	75.4	97	—	68
67	900	—	—	85.0	—	76.1	92.9	83.6	74.2	95	—	67
66	865	—	—	84.5	—	75.4	92.5	82.8	73.3	92	—	66
65	832	—	(739)	83.9	—	74.5	92.2	81.9	72.0	91	—	65
64	800	—	(722)	83.4	—	73.8	91.8	81.1	71.0	88	—	64
63	772	—	(705)	82.8	—	73.0	91.4	80.1	69.9	87	—	63
62	746	—	(688)	82.3	—	72.2	91.1	79.3	68.8	85	—	62
61	720	—	(670)	81.8	—	71.5	90.7	78.4	67.7	83	—	61
60	697	—	(654)	81.2	—	70.7	90.2	77.5	66.6	81	—	60
59	674	—	(634)	80.7	—	69.9	89.8	76.6	65.5	80	—	59
58	653	—	615	80.1	—	69.2	89.3	75.7	64.3	78	—	58
57	633	—	595	79.6	—	68.5	88.9	74.8	63.2	76	—	57
56	613	—	577	79.0	—	67.7	88.3	73.9	62.0	75	—	56
55	595	—	560	78.5	—	66.9	87.9	73.0	60.9	74	2075(212)	55
54	577	—	543	78.0	—	66.1	87.4	72.0	59.8	72	2015(205)	54
53	560	—	525	77.4	—	65.4	86.9	71.2	58.5	71	1950(199)	53
52	544	(500)	512	76.8	—	64.6	86.4	70.2	57.4	69	1880(192)	52
51	528	(487)	496	76.3	—	63.8	85.9	69.4	56.1	68	1820(186)	51
50	513	(475)	481	75.9	—	63.1	85.5	68.5	55.0	67	1760(179)	50
49	498	(464)	469	75.2	—	62.1	85.0	67.6	53.8	66	1695(173)	49
48	484	451	455	74.7	—	61.4	84.5	66.7	52.5	64	1635(167)	48
47	471	442	443	74.1	—	60.8	83.9	65.8	51.4	63	1580(151)	47
46	458	432	432	73.6	—	60.0	83.5	64.8	50.3	62	1530(156)	46
45	446	421	421	73.1	—	59.2	83.0	64.0	49.0	60	1480(151)	45
44	434	409	409	72.5	—	58.5	82.5	63.1	47.0	58	1435(146)	44
43	423	400	400	72.0	—	57.7	82.0	62.2	46.7	57	1385(141)	43
42	412	390	390	71.5	—	56.9	81.5	61.3	45.5	56	1340(136)	42
41	402	381	381	70.9	—	56.2	80.9	60.4	44.3	55	1295(132)	41
40	392	371	371	70.4	—	55.4	80.4	59.5	43.1	54	1250(127)	40
39	382	362	362	69.9	—	54.6	79.9	58.6	41.9	52	1215(124)	39
38	372	353	353	69.4	—	53.8	79.4	57.7	40.8	51	1180(120)	38
37	363	344	344	68.9	—	53.1	78.8	56.8	39.6	50	1160(118)	37
36	354	336	336	68.4	(109.0)	52.3	78.3	55.9	38.4	49	1115(114)	36
35	345	327	327	67.9	(108.5)	51.5	77.7	55.0	37.2	48	1080(110)	35
34	336	319	319	67.4	(108.0)	50.8	77.2	54.2	36.1	47	1055(108)	34
33	327	311	311	66.8	(107.5)	50.0	76.6	53.3	34.9	46	1025(105)	33
32	318	301	301	66.3	(107.0)	49.2	76.1	52.1	33.7	44	1000(102)	32
31	310	294	294	65.8	(106.0)	48.4	75.6	51.3	32.7	43	980(100)	31
30	302	286	286	65.3	(105.5)	47.7	75.0	50.4	31.3	42	950(97)	30
29	294	279	279	64.7	(104.5)	47.0	74.5	49.5	30.1	41	930(95)	29
28	286	271	271	64.3	(104.0)	46.1	73.9	48.6	28.9	41	910(93)	28
27	279	264	264	63.8	(103.0)	45.2	73.3	47.7	27.8	40	880(90)	27
26	272	258	258	63.3	(102.5)	44.6	72.8	46.8	26.7	38	860(88)	26
25	266	253	253	62.8	(101.5)	43.8	72.2	45.9	25.5	38	840(86)	25
24	260	247	247	62.4	(101.0)	43.1	71.6	45.0	24.3	37	825(84)	24
23	254	243	243	62.0	100.0	42.1	71.0	44.0	23.1	36	805(82)	23
22	248	237	237	61.5	99.0	41.6	70.5	43.2	22.0	35	785(80)	22
21	243	231	231	61.0	98.5	40.9	69.9	42.3	20.7	35	770(79)	21
20	238	226	226	60.5	97.8	40.1	69.4	41.5	19.6	34	760(77)	20
(18)	230	219	219	—	96.7	—	—	—	—	33	730(75)	(18)
(16)	222	212	212	—	95.5	—	—	—	—	32	705(72)	(16)
(14)	213	203	203	—	93.8	—	—	—	—	31	675(69)	(14)
(12)	204	194	194	—	92.3	—	—	—	—	29	650(66)	(12)
(10)	196	187	187	—	90.7	—	—	—	—	28	620(63)	(10)
(8)	188	179	179	—	89.5	—	—	—	—	27	600(61)	(8)
(6)	180	171	171	—	87.1	—	—	—	—	26	580(59)	(6)
(4)	173	165	165	—	85.5	—	—	—	—	25	550(56)	(4)
(2)	166	158	158	—	83.5	—	—	—	—	24	530(54)	(2)
(0)	160	152	152	—	81.7	—	—	—	—	24	515(53)	(0)

Notes (1) The figures in blue are based on Table 1 of ASTM E 140 (adjusted by SEA, ASM and ASTM in collaboration)

(2) The values and units in parentheses have been converted from psi based on conversion tables of JIS Z 8413 and Z 8438. 1Mpa=1N/mm²

(3) The figures in parentheses are less frequently used values and are for reference only.

1. Categories of surface roughness

Definitions and indications for surface roughness parameters (for industrial products) are specified. They are arithmetical mean roughness (Ra), maximum height (Ry), ten-point mean roughness (Rz), mean spacing of profile irregularities (Sm), mean spacing of local peaks of the profile (S) and profile bearing length ratio (tp). Surface roughness is given as the arithmetical mean value for a randomly sampled area. [Mean center line roughness (Ra75) is defined in the annexes of JIS B0031 and JIS B(0061)].

Table 1 Typical ways for obtaining surface roughness

<p>Arithmetical mean roughness (Ra)</p> <p>A section of standard length is sampled from the mean line on the roughness chart. The mean line is laid on a Cartesian coordinate system where in the mean line runs in the direction of the x-axis and magnification is the Y-axis. The value obtained with the formula on the right is expressed in micrometer (μm) when $\gamma = 1(\lambda)$</p>	<p style="text-align: center;">$Ra = \frac{1}{l} \int_0^l f(x) dx$</p>
<p>Maximum peak (Ry)</p> <p>A section of standard length is sampled from the mean line on the roughness chart. The distance between the peaks and valleys of the sampled line is measured in the y direction. The value is expressed in micrometer (μm).</p> <p>Notes: To obtain Ry, sample only the standard length. The part, where peaks and valleys are wide enough to be interpreted as scratches, should be avoided.</p>	<p style="text-align: center;">$Ry = Rp + Rv$</p>
<p>Ten-point mean roughness (Rz)</p> <p>A section of standard length is sampled from the mean line on the roughness chart. The distance between the peaks and valleys of the sampled line is measured in the y direction. Then, the average peak is obtained among 5 tallest peaks (Yp), as is the average valley between 5 lowest valleys (Yv). The sum of these two values is expressed in micrometer (μm).</p>	<p style="text-align: center;">$Rz = \frac{Yp1 + Yp2 + Yp3 + Yp4 + Yp5 + Yv1 + Yv2 + Yv3 + Yv4 + Yv5}{5}$</p> <p style="text-align: center;">Yp1, Yp2, Yp3, Yp4, Yp5: Tallest 5 peaks within sample Yv1, Yv2, Yv3, Yv4, Yv5: Lowest 5 peaks within sample</p>

Reference: Relationship between arithmetical mean roughness (Ra) and conventional symbols

Arithmetical mean roughness Ra			Max. Height Ry	Ten-point mean roughness Rz	Standard length of Ry · Rz l (mm)	Triangular indication	
Preferred number series	Cut-off value C (mm)	Indication of surface texture on drawings	Preferred number series				
0.012 a	0.08	$\sqrt{0.012} / \sqrt{0.08}$	0.05 s	0.05 z	0.08		
0.025 a			0.1 s	0.1 z			
0.05 a			0.2 s	0.2 z			
0.1 a			0.4 s	0.4 z	0.25		
0.2 a			0.8 s	0.8 z			
0.4 a	0.8	$\sqrt{0.4} / \sqrt{0.8}$	1.8 s	1.8 z	0.8		
0.8 a			3.2 s	3.2 z			
1.8 a			6.3 s	6.3 z	0.25		
3.2 a	0.25	$\sqrt{3.2} / \sqrt{0.25}$	12.5 s	12.5 z		0.25	
6.3 a			25 s	25 z			
12.5 a			8	$\sqrt{12.5} / \sqrt{8}$	50 s	50 z	
25 a	100 s	100 z					
50 a	-	$\sqrt{50} / \sqrt{100}$			200 s	200 z	-
100 a			400 s	400 z			

* The interdependence for 3 classes is not strictly enforced.

* The evaluation lengths of Ra, Ry and Rz: Five times the cut-off value and standard length respectively.

Kinds and symbols of geometrical tolerances

Kinds of tolerance	Symbol	Definition of tolerance zone	Examples of diagrammatical indication and its interpretation
Form tolerance	Straightness tolerance	Where symbol \perp is attached before the numerical value indicating a tolerance zone, this tolerance zone is a zone in a cylinder of diameter ϕ .	Where a tolerance frame is connected to the dimension showing the diameter of a cylinder, the axis of the cylinder shall be contained by a cylinder of 0.08mm diameter.
	Flatness tolerance	The tolerance zone is a zone held between two parallel planes a distance apart.	This surface shall be contained between two parallel planes 0.08mm apart.
	Circularity tolerance	The tolerance zone in the considered plane is a zone between two concentric circles a distance apart.	The circumference in any section normal to the axis shall be contained between two concentric circles 0.1mm apart on the same plane.
	Cylindricity tolerance	The tolerance zone is a zone contained between two coaxial cylindrical surfaces a distance apart.	The considered surface shall be contained between two coaxial cylindrical surfaces of 0.1mm apart.
	Profile tolerance of line	The tolerance zone is a zone held between two lines enveloping circles of diameter ϕ , the centers of which are situated on a theoretically exact profile line.	In any cross section parallel to the projection plane, the considered profile shall be contained between two lines enveloping circles of 0.04mm in diameter, the centers of which are situated on a line having the theoretically exact profile.
	Profile tolerance of surface	The tolerance zone is a zone held between two surfaces enveloping the spheres of diameter ϕ , the centers of which are situated on a theoretically exact profile surface.	The considered surface shall be contained between two surfaces enveloping the spheres of diameter 0.02mm, the centers of which are situated on a surface having the theoretically exact profile.
Orientation tolerance	Parallelism tolerance	The tolerance zone is a zone held between two parallel planes parallel to the datum plane and a distance apart from each other.	The surface shown by the arrow of the leader line shall be contained between two planes parallel to the datum plane A and 0.01mm apart from each other in the direction of the arrow of the leader line.
	Perpendicularity tolerance	Where symbol \perp is attached before the numerical value indicating the tolerance, the tolerance zone is a zone within a cylinder of diameter ϕ perpendicular to the datum plane.	The axis of the cylinder shown by the arrow of the leader line shall be contained within a cylinder of diameter 0.01mm perpendicular to the datum plane A.
	Angularity tolerance	The tolerance zone is a zone held between two parallel planes inclined at the specified angle to the datum plane and a distance apart from each other.	The surface shown by the arrow of the leader line shall be contained between two parallel planes which are inclined at 40° with the theoretical axis to the datum plane A and which are 0.08mm apart from each other in the direction of the arrow of the leader line.
Location tolerance	Positional tolerance	The tolerance zone is a zone within a circle or sphere of diameter ϕ having its center at the theoretically exact location, hereinafter referred to as the true location.	The point shown by the arrow of the leader line shall be contained within a circle of 0.03mm diameter having its center at the true location 60mm and 100mm apart respectively from the datum straight line A and from the datum straight line B.
	Coaxiality tolerance of concentricity tolerance	Where symbol \perp is attached before the numerical value indicating the tolerance, the tolerance zone is a zone within a cylinder of diameter ϕ whose axis agrees with the datum axial straight line.	The axis shown by the arrow of the leader line shall be contained within a cylinder of 0.01mm diameter whose axis agrees with the datum axial straight line A.
	Symmetry tolerance	The tolerance zone is a zone held between two parallel planes a distance apart from each other and arranged symmetrically about the datum median plane.	The median surface shown by the arrow of the leader line shall be contained between two parallel planes 0.08mm apart from each other and arranged symmetrically about the datum median plane A.
Run-out tolerance	Circular run-out tolerance	The tolerance zone is a zone between two concentric circles whose centers agree with the datum axial straight line on any measuring plane normal to the datum axial straight line and which are a distance apart from each other in the radial direction.	The run-out in the radial direction of the cylinder surface shown by the arrow of the leader line shall not exceed 0.1mm on any measuring plane normal to the datum axial straight line when the cylinder is rotated by one revolution about the datum axial straight line A-B.
	Total run-out tolerance	The tolerance zone is a zone between two coaxial cylinders having axes agreeing with the datum axial straight line and a distance apart from each other in the radial direction.	The total radial run-out of the cylinder surface shown by the arrow of the leader line shall not exceed 0.1mm at any point on the cylinder surface when the cylinder part is rotated about the datum axial straight line A-B with relative movement in the axial direction.

Lines used in the drawing in the column of "definition of tolerance zone" indicate the following meanings:

- Thin solid line or broken line: Feature
- Thin alternate long and short dash line: Datum
- Thin solid line or broken line: Tolerance zone

- Thin alternate long and short dash line: Center line
- Thin alternate long and short dash line: Supplementary projection plane or sectional plane
- Thin alternate long and short dash line: Projection of feature to supplementary projection plane or sectional plane

Stainless steels · Heat resisting steels and related materials

Japan Industrial Standards			Steel Type Related to Foreign Standards					Steel Type Related to Foreign Standards		
Standard Number Name	Code	ISO 683/1, 10, 11 ¹⁾	AISI SAE	AISI SAE	BS 970 Part13 BS EN 10083-1,2	DIN EN 10083-1,2	DIN EN 10083-1,2	MF A3-6551 MF EN 10083-1,2	ISO 683/1, 10, 11 ¹⁾	OCCT 4543
JIS G 4051 Carbon steel for machine structural use	S10C	C10	1010	1010	040A10 045A10 045M10	C10E C10R	XC10			
	S12C		1012	1012	040A12		XC12			
	S13C	C13E4 C15M2	1015	1015	055M15	C15E C15R	XC18			
	S17C		1017	1017						
	S20C		1020	1020	070M20 C22 C22E C22R	C22 C22E C22R	C22 C22E C22R			
	S22C		1023	1023						
	S25C	C25E C25E4 C25M2	1025	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R			
	S28C		1029	1029					25 f	
	S30C	C30 C30E4 C30M2	1030	1030	080A30 090M30 C30 C30E C30R C30R	C30 C30E C30R	C30 C30E C30R		30 f	
	S35C								30 f	
S35C	C35 C35E4 C35M2	1035	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R		35 f		
S38C		1038	1038					35 f		
S40C	C40 C40E4 C40M2	1039 1040	1039 1040	080M40 C40 C40E C40R	C40 C40E C40R	C40 C40E C40R		40 f		
S43C		1042	1043	080A42				40 f		
S45C	C45 C45E4 C45M2	1045	1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R		45 f		
S48C				080A47				45 f		
S50C	C50 C50E4 C50M2	1049	1049	080M50 C50 C50E C50R	C50 C50E C50R	C50 C50E C50R		50 f		
S53C		1050	1053					50 f		
S55C	C55 C55E4 C55M2	1055	1055	070M55 C55 C55E C55R	C55 C55E C55R	C55 C55E C55R				
S58C	C60 C60E4 C60M2	1059	1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R		60 f		
S09CK				045A10 045M10	C10E	XC10				
S15CK					C15E	XC12				
S20CK						XC18				

ISO: International Organization for Standardization
 AISI: American Iron Steel Institute
 SAE: Society of Automotive Engineers
 BS: British Standards

Japan Industrial Standards			Steel Type Related to Foreign Standards					Steel Type Related to Foreign Standards				
Standard Number Name	Code	ISO 683/1, 10, 11 ¹⁾	AISI SAE	AISI SAE	BS 970 Part13 BS EN 10083-1,2	DIN EN 10083-1,2	DIN EN 10083-1,2	MF A3-6551 MF EN 10083-1,2	ISO 683/1, 10, 11 ¹⁾	OCCT 4543		
JIS G 4102 Nickel-chrome steel	SNC236									40XH		
	SNC415									30XH13A		
JIS G 4103 Nickel-chrome molybdenum steel	SNC815				15NiCr13	15NiCr13						
	SNC816											
	SNCM220				805A20 805M20 805A22 805M22	20NiCrMo2 20NiCrMoS2	20NiCrMo2 20NiCrMoS2					
	SNCM240				8637 41NiMoS2 8640					10NiMoD10		
JIS G 4104 Chrome steel	SNCM415											
	SNCM420				4320							
	SNCM431											
	SNCM439				4340							
	SNCM447											
	SNCM616											
	SNCM625											
	SNCM630											
	SNCM815											
	SCR415					17Cr3 17CrS3			15X 15XA			
JIS G 4105 Chrome steel	SCR420				20Cr4 20CrS4				20X			
	SCR430				34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4		30X			
	SCR435				34Cr4 34CrS4 37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4		35X			
	SCR440				37Cr4 37CrS4 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4		40X			
	SCR445								45X			
	SCM415											
	SCM418				18CrMo4 18CrMoS4		18CrMo4 18CrMoS4		20XM			
	SCM420					708M20			20XM			
	SCM421											
	SCM430				4131				30XM 30XM A			
JIS G 4106 Chrome steel	SCM432											
	SCM435				34CrMo4 34CrMoS4	4137	34CrMo4 34CrMoS4		35XM			
	SCM440				42CrMo4 42CrMoS4	4142	42CrMo4 42CrMoS4					
	SCM445				4145 4147							
SCM922												

DIN: Deutsches Institut für Normung
 EN: European Standards
 NF: Norme Française
 OCT: National standard of the former USSR

Japan Industrial Standards		Steel Type Related to Foreign Standards					
Standard Number Name	Co.de	I S O (8831, 10.11)	A I S I S A E	B S 370 Part1,3 B S E N 10083-1,2	D I N E N 10084 D I N E N 10083-1,2	J F A 35-551 J F E N 10083-1,2	J O C T 4543
JIS G 4107 High-purity alloy steel for bolt	SNE55	-	501	708M40	-	-	-
	SNE7	42CrMo4 42CrMoS4	4142 4145	709M40 42CrMo4.1	42CrMo4 ^a	42CrMo4 ^a	-
	SNE16	-	-	40CrMoV4-6 ¹	40CrMoV4.7 ¹	40CrMoV4.6 ^a	-
JIS G 4108 Steel bar for special-purpose alloy steel bolts	SNE21-1 ~ 5	-	-	40CrMoV4-6 ¹	40CrMoV4.7 ¹	40CrMoV4.6 ^a	-
	SNE22-1 ~ 5	42CrMo4 42CrMoS4	4142H	-	42CrMo4 ^a	-	-
	SNE23-1 ~ 5	-	E4340H	-	-	-	-
SNE24-1 ~ 5	-	4340	-	-	-	-	

Notes : 1) B S E N 10259
 2) D I N 1654 Part 4
 3) J F E N 10259
 4) I S O 883-1, 10.11 have been issued as JIS G 7051, G 7052, G 7053 by Translation JIS.

Names of tool steel

Rolled steel for general structures SS400 Steel - Structure - 400N/mm²
 Carbon steel for machinery structures S45C Steel - 0.45%C
 Chrome molybdenum steel SCM435 Steel - Cr - Mo435
 Nickel chrome molybdenum steel SNCM220 Steel - Ni - Cr - Mo220
 Carbon tool steel SK105 Steel - Kogal(Tool) - T0.5 types
 (Old SK3)
 Alloy tool steel SK53 Steel - Kogal(Tool) - Special - 3 types
 SKD11 Steel - Kogal(Tool) - Dies - 11 types
 SKD51 Steel - Kogal(Tool) - High Speed - 51 types
 SUJ2 Steel - Use - Jikkaikei(Bearing) - 2 types
 SUS304 Steel - Use - Stainless - 304 types
 FC250 Ferrum(iron) - Cast - 250N/mm²
 Gray iron

Japan Industrial Standards		Steel Type Related to Foreign Standards					
Standard Number Name	Co.de	I S O (8831, 10.11)	A I S I S A E	B S 370 Part1,3 B S E N 10083-1,2	D I N E N 10084 D I N E N 10083-1,2	J F A 35-551 J F E N 10083-1,2	J O C T 4543
JIS G 4106 Structural manganese steel for machine structural use and manganese chromium steel	SMn20	22Mn6	1522	150M19	-	-	30 J 2
	SMn33	-	1534	150M36	-	-	35 J 2
	SMn43B	36Mn6	1541	150M36	-	-	40 J 2
	SMn43	42Mn6	1541	-	-	-	40 J 2
	SMnC220	-	-	-	-	-	45 J 2
	SMnC243	-	-	-	-	-	-
	SACM645	41CrAlNiMo7.4	-	-	-	-	-
	SMn20H	22Mn6	1522H	-	-	-	-
	SMn33H	-	-	-	-	-	-
	SMn38H	36Mn6	1541H	-	-	-	-
JIS G 4052 Aluminum chrome molybdenum steel	SMn43H	42Mn6	1541H	-	-	-	-
	SMnC220H	-	-	-	-	-	-
	SMnC243H	-	-	-	-	-	-
	SCr413H	-	-	-	17Cr3 17CrS3	-	15X
	SCr420H	20Cr4 20CrS4	5120H	-	-	-	20X
	SCr430H	34Cr4 34CrS4	5130H 5132H	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
	SCr435H	34Cr4 34CrS4 37CrS4	5135H	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
	SCr440H	37Cr4 37CrS4 41CrS4	5140H	41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
	SCM415H	-	-	-	-	-	-
	SCM418H	18CrMo4 18CrMoS4	-	-	18CrMo4 18CrMoS4	-	-
JIS G 4053 Structural steel with guaranteed hardensability (R steel)	SCM420H	-	-	708H20	-	-	-
	SCM435H	34CrMo4 34CrMoS4	4135H 4137H	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	-
	SCM440H	42CrMo4 42CrMoS4	4140H 4142H	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	-
	SCM445H	-	4145H 4147H	-	-	-	-
	SCM822H	-	-	-	-	-	-
	SNC415H	-	-	-	-	-	-
	SNC631H	-	-	-	-	-	-
	SNC815H	15NiCr13	-	655H13	15NiCr13	-	-
	SNCM220H	20NiCrMo2 20NiCrMoS2	8617H 8620H 8622H	805H17 805H20 805H22	-	20NiCrD2	-
	SNCM420H	-	-	4320H	-	-	-

Tolerances Of Commonly Used For Shaft & Hole Fits (European Standard)



(Unit: μm) Tolerance zone for shaft							(Unit: μm) Tolerance zone for hole						
zone	1 up to 3	over 3 up to 6	over 6 up to 10	over 10 up to 18	over 18 up to 30	over 30 up to 50	zone	1 up to 3	over 3 up to 6	over 6 up to 10	over 10 up to 18	over 18 up to 30	over 30 up to 50
Tolerance							Tolerance						
h3	0 -2	0 -2.5	0 -2.5	0 -3	0 -4	0 -4	H5	+4 0	+5 0	+6 0	+8 0	+9 0	+11 0
h4	0 -3	0 -4	0 -4	0 -5	0 -6	0 -7	H11	+60 0	+75 0	+90 0	+106 0	+130 0	+160 0
h10	0 -40	0 -48	0 -58	0 -70	0 -84	0 -100	H12	+100 0	+120 0	+150 0	+180 0	+210 0	+250 0
h11	0 -60	0 -75	0 -90	0 -110	0 -130	0 -160	J6	+2 -4	+5 -3	+5 -4	+6 -5	+8 -5	+10 -6
j6	+4 -2	+6 -2	+7 -2	+8 -3	+9 -4	+11 -5	J7	+4 -6	+6 -6	+8 -7	+10 -8	+12 -9	+14 -11
js8	± 7	± 9	± 11	± 13.5	± 16.5	± 19.5	J55	± 2	± 2.5	± 3	± 4	± 4.5	± 5.5
js9	± 12.5	± 15	± 18	± 21.5	± 26	± 31	K8	0 -14	+5 -13	+6 -16	+8 -19	+10 -23	+12 -27
js13	± 70	± 90	± 110	± 135	± 165	± 195	-	-	-	-	-	-	-
js14	± 125	± 150	± 180	± 215	± 260	± 310	-	-	-	-	-	-	-
k7	+10 0	+13 +1	+16 +1	+19 +1	+23 +2	+27 +2	-	-	-	-	-	-	-
m4	+5 +2	+8 +4	+10 +6	+12 +6	+14 +8	+16 +9	-	-	-	-	-	-	-

TOLERANCES OF COMMONLY USED HOLE FITS

Excerpt from JIS B 0401



Deviations of Hole to be used in commonly used fits

Basic size φp (mm)	Tolerance zone class of Hole																				Unit: μm																				
	Over	IT1	B10	C3	C10	D6	D8	D10	E7	E8	E9	F5	F7	F8	G6	G7	H6	H7	H8	H9	H10	J8S	J87	K6	K7	M6	M7	M6	N7	N6	P6	P7	R7	R7	S7	T7	U7	X7			
-	3	+180	+85	+100	+34	+45	+60	+24	+28	+39	+12	+16	+20	+8	+2	+2	+6	+10	+14	+25	+40	±0	±3	±5	0	0	-2	-4	-4	-6	-10	-14	-6	-10	-14	-18	-20	-18	-20		
3	6	+188	+100	+118	+48	+60	+78	+32	+38	+50	+18	+22	+28	+12	+16	+8	+8	+12	+18	+30	+48	±4	±6	±6	+2	+3	-1	0	-5	-4	-9	-8	-11	-15	-8	-11	-15	-19	-24	-19	-24
6	10	+208	+116	+138	+62	+76	+98	+40	+47	+61	+22	+28	+35	+14	+20	+9	+15	+22	+36	+68	±4.5	±7	±7	+2	+5	-3	0	-7	-4	-12	-9	-13	-17	-10	-13	-17	-22	-28	-22	-28	
10	14	+220	+138	+165	+77	+93	+120	+60	+69	+75	+27	+34	+43	+17	+24	+11	+18	+27	+43	+70	±5.5	±9	±9	+2	+6	-4	0	-9	-6	-15	-11	-16	-21	-11	-16	-21	-26	-31	-26	-31	
14	18	+240	+150	+180	+85	+105	+135	+70	+80	+85	+30	+38	+48	+20	+28	+15	+24	+36	+54	+84	±6.5	±10	±10	+2	+8	-4	0	-11	-7	-18	-14	-20	-27	-14	-20	-27	-33	-39	-34	-39	
18	24	+264	+162	+194	+98	+117	+149	+61	+73	+82	+33	+41	+53	+20	+28	+13	+21	+33	+52	+84	±8	±12	±12	+3	+7	-4	0	-12	-8	-21	-17	-25	-34	-21	-25	-34	-39	-45	-51	-46	-51
24	30	+280	+170	+210	+105	+125	+165	+70	+80	+90	+35	+43	+55	+25	+35	+15	+25	+35	+55	+90	±9	±15	±15	+4	+9	-6	0	-14	-9	-26	-21	-30	-37	-26	-30	-37	-45	-51	-56	-61	-56
30	40	+300	+180	+220	+110	+130	+170	+80	+90	+100	+40	+48	+60	+30	+40	+20	+30	+40	+60	+100	±10	±16	±16	+5	+10	-7	0	-16	-10	-30	-24	-33	-40	-29	-33	-40	-48	-54	-61	-67	-77
40	50	+320	+192	+230	+115	+135	+175	+85	+95	+105	+42	+50	+62	+32	+42	+22	+32	+42	+62	+110	±11	±17	±17	+6	+12	-8	0	-17	-10	-33	-27	-36	-43	-32	-36	-43	-51	-58	-65	-71	-86
50	65	+340	+204	+240	+120	+140	+180	+90	+100	+110	+44	+52	+64	+34	+44	+24	+34	+44	+64	+120	±12	±18	±18	+7	+14	-9	0	-18	-11	-36	-30	-39	-46	-35	-39	-46	-54	-61	-68	-76	-91
65	80	+360	+216	+250	+125	+145	+185	+95	+105	+115	+46	+54	+66	+36	+46	+26	+36	+46	+66	+130	±13	±19	±19	+8	+16	-10	0	-19	-12	-39	-33	-42	-49	-38	-42	-49	-57	-64	-71	-86	-101
80	100	+380	+228	+260	+130	+150	+190	+100	+110	+120	+48	+56	+68	+38	+48	+28	+38	+48	+68	+140	±14	±20	±20	+9	+18	-11	0	-20	-13	-40	-34	-43	-50	-39	-43	-50	-58	-65	-72	-87	-102
100	120	+400	+240	+270	+135	+155	+195	+105	+115	+125	+50	+58	+70	+40	+50	+30	+40	+50	+70	+150	±15	±21	±21	+10	+20	-12	0	-21	-14	-41	-35	-44	-51	-40	-44	-51	-59	-66	-73	-88	-103
120	140	+420	+252	+280	+140	+160	+200	+110	+120	+130	+52	+60	+72	+42	+52	+32	+42	+52	+72	+160	±16	±22	±22	+11	+22	-13	0	-22	-15	-42	-36	-45	-52	-41	-45	-52	-60	-67	-74	-89	-104
140	160	+440	+264	+290	+145	+165	+205	+115	+125	+135	+54	+62	+74	+44	+54	+34	+44	+54	+74	+170	±17	±23	±23	+12	+24	-14	0	-23	-16	-43	-37	-46	-53	-42	-46	-53	-61	-68	-75	-90	-105
160	180	+460	+276	+300	+150	+170	+210	+120	+130	+140	+56	+64	+76	+46	+56	+36	+46	+56	+76	+180	±18	±24	±24	+13	+26	-15	0	-24	-17	-44	-38	-47	-54	-43	-47	-54	-62	-69	-76	-91	-106
180	200	+480	+288	+310	+155	+175	+215	+125	+135	+145	+58	+66	+78	+48	+58	+38	+48	+58	+78	+190	±19	±25	±25	+14	+28	-16	0	-25	-18	-45	-39	-48	-55	-44	-48	-55	-63	-70	-85	-100	
200	225	+500	+300	+320	+160	+180	+220	+130	+140	+150	+60	+68	+80	+50	+60	+40	+50	+60	+80	+200	±20	±26	±26	+15	+30	-17	0	-26	-19	-46	-40	-49	-56	-45	-49	-56	-64	-71	-86	-101	
225	250	+520	+312	+330	+165	+185	+225	+135	+145	+155	+62	+70	+82	+52	+62	+42	+52	+62	+82	+210	±21	±27	±27	+16	+32	-18	0	-27	-20	-47	-41	-50	-57	-46	-50	-57	-65	-72	-87	-102	
250	280	+540	+324	+340	+170	+190	+230	+140	+150	+160	+64	+72	+84	+54	+64	+44	+54	+64	+84	+220	±22	±28	±28	+17	+34	-19	0	-28	-21	-48	-42	-51	-58	-47	-51	-58	-66	-73	-88	-103	
280	315	+560	+336	+350	+175	+195	+235	+145	+155	+165	+66	+74	+86	+56	+66	+46	+56	+66	+86	+230	±23	±29	±29	+18	+36	-20	0	-29	-22	-49	-43	-52	-59	-48	-52	-59	-67	-74	-89	-104	
315	355	+580	+348	+360	+180	+200	+240	+150	+160	+170	+68	+76	+88	+60	+70	+50	+60	+70	+90	+240	±24	±30	±30	+19	+38	-21	0	-30	-23	-50	-44	-53	-60	-49	-53	-60	-68	-75	-90	-105	
355	400	+600	+360	+370	+185	+205	+245	+155	+165	+175	+70	+78	+90	+62	+72	+52	+62	+72	+92	+250	±25	±31	±31	+20	+40	-22	0	-31	-24	-51	-45	-54	-61	-50	-54	-61	-69	-76	-91	-106	
400	450	+620	+372	+380	+190	+210	+250	+160	+170	+180	+72	+80	+92	+64	+74	+54	+64	+74	+94	+260	±26	±32	±32	+21	+42	-23	0	-32	-25	-52	-46	-55	-62	-51	-55	-62	-70	-77	-92	-107	
450	500	+640	+384	+390	+195	+215	+255	+165	+175	+185	+74	+82	+94	+66	+76	+56	+66	+76	+96	+270	±27	±33	±33	+22	+44	-24	0	-33	-26	-53	-47	-56	-63	-52	-56	-63	-71	-78	-93	-108	

Note: This table shows that the upper figures are the upper deviation and the lower figures are the lower deviation.

PRODUCTION MACHINERY EQUIPMENT & QC MEASURING EQUIPMENT

MACHINERY EQUIPMENT			MEASURING EQUIPMENT		
List of equipment	Q'ty	Origin	List of Machine	Q'ty	Origin
CNC Lathe	10	Taiwan	3D Check Master Coordinate Measuring Machine	1	Taiwan
CNC Lathe	1	Taiwan	2D Timos Coordinate Measuring Machine	1	Germany
CNC Milling Machine	5	Japan	Rockwell hardness tester	1	Taiwan
CNC Internal Grinder Double axle	3	Taiwan	Vickers hardness tester	1	Japan
CNC Surface Grinder	1	Taiwan	Timos length tester	1	Germany
CNC External Grinder	4	Japan	Surface roughness tester	1	Swiss
Internal Honing Machine	2	USA	SUNNEN Internal micrometer	1	USA
Cutting Machine	2	Taiwan	Profile projector	1	Japan



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