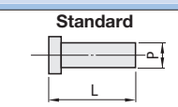
High Speed Steel
SKH51 equivalent
4mm head

STRAIGHT EJECTOR PINS

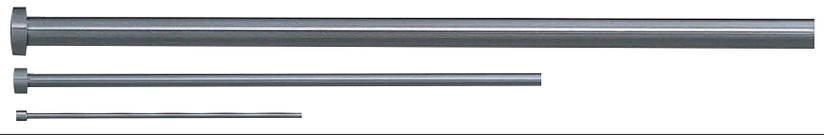
—STANDARD—

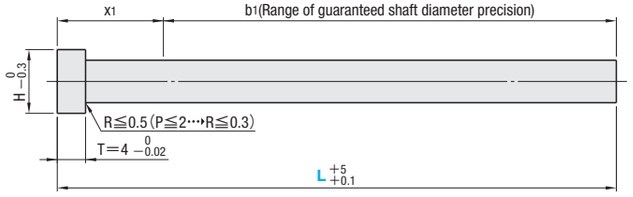
Standard

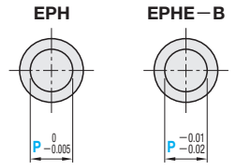


Non JIS material definition is listed on P.1351 - 1352

RoHS







Part Number	Head thickness	T P
EPH	4mm(T4)	0 −0.005
EPHE−B		−0.01 −0.02

EPH・EPHE−B (when P=0.2) is applied with overall quenching. (Head without annealing)

Range of guaranteed shaft diameter precision (Details P.1301)
T4 ⋯ x1 max.30

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)

H	T	Part Number Type	Part Number P	L Selection
2	4	EPH (P 0 −0.005) EPHE−B (P −0.01 −0.02)	0.2	60
3			0.3	60
			0.4 0.5	60 100
			0.6 0.7	100 150
			0.8 0.9	100 150
			1 1.1 1.2 1.3 1.4	100 150 200
			1.5	100 150 200 250
4			1.6	100 150 200 250
			1.7 1.8 1.9	100 150 200
5			2	100 150 200 250 300
			2.1	100 150 200 250
6			2.2 2.3 2.4	100 150 200
			2.5	100 150 200 250 300
			2.6	100 150 200 250
7			2.7 2.8 2.9	100 150 200
			3	100 150 200 250 300 350
			3.1	100 150 200 250
			3.2 3.3 3.4	100 150 200
			3.5	100 150 200 250 300 350
			3.6	100 150 200 250
			3.7 3.8 3.9	100 150 200
			4	100 150 200 250 300 350
8			4.1	100 150 200 250
			4.2 4.3 4.4	100 150 200
			4.5	100 150 200 250 300 350
			4.6	100 150 200 250
9			4.7 4.8 4.9	100 150 200
			5	100 150 200 250 300 350
			5.1	100 150 200 250
			5.5	100 150 200 250 300 350
10			5.6	100 150 200 250
			6	100 150 200 250 300 350
			6.1	100 150 200 250
			6.5	100 150 200 250 300 350
			6.6	100 150 200 250
11			7	100 150 200 250 300 350
			7.1	100 150 200 250
14			7.5 7.6	100 150 200 250
			8	100 150 200 250 300 350
15			8.1	100 150 200 250
			8.5 8.6	100 150 200 250
17			9	100 150 200 250 300 350
			9.1 9.5 9.6	100 150 200 250
			10	100 150 200 250 300 350
			10.1	100 150 200 250
			10.5 10.6 11 11.1	100 150 200 250
			11.5 11.6	100 150 200 250
			12	150 200 250 300 350

Please take the order for head JIS type EPHJ (P 0 −0.005), EPHJE (P −0.01 −0.02). P.59

Order — Part Number — L
EPH 1.5 — 150

Days to Ship — Quotation

Alterations — Part Number — L — (KC・WKC⋯etc.)
EPH 2.5 — 150 — TC3.0
Quotation

Alteration details P.53

Alterations	Code	Spec.	1Code
VKC 0 −0.02	VKC	Precision single flat cutting P/2≦VKC＜H/2	
VWC 0 −0.02	VWC	Precision two flats cutting P/2≦VWC＜H/2	
KC 0 −0.1	KC	Single flat cutting P/2≦KC＜H/2	
WKC 0 −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC 0 −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	Quotation
RKC 0 −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC 0 −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC 0 −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC 0 −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° KTC 0 −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation 0.05mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	
H HCC 0 −0.02	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3, P≧1.5	
TC 0 −0.02 4	TC	TC=0.1mm increments 2.0≦TC＜4, P≧1.5 Dimension L becomes shorter by (4-TC)	
H 3 2 +0.1 0 4	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN not available.	Quotation
H 5 2 4	NCW	Dowel hole boring+Dowel pin driving Available when H≧4 Combination with other than NHC・NHN not available.	
H 5 2 4	NCS	Dowel hole boring+Dowel pin driving Available when H≧4 Combination with other than NHC・NHN not available.	
217	NHC	Numbering on the head How to order P.54 Available when H≧2 Combination with SKC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Available when H≧2 Combination with SKC not available.	

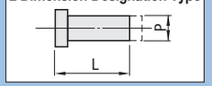
Price — Quotation

High Speed Steel
SKH51 equivalent
4mm head

STRAIGHT EJECTOR PINS

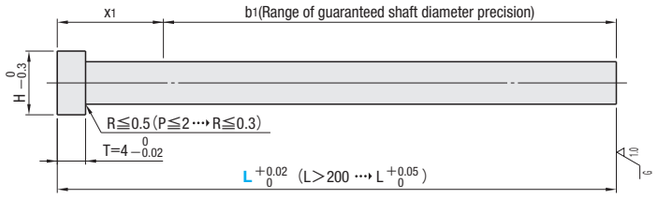
— L DIMENSION DESIGNATION TYPE —

L Dimension Designation Type

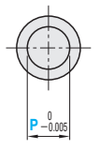


Non JIS material definition is listed on P.1351 - 1352

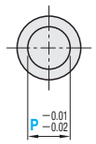
RoHS



EPY—L
EPH—L



EPHE—L



Part Number	Head thickness	T P
EPY—L EPH—L	4mm(T4)	0 −0.005
EPHE—L		−0.01 −0.02

EPY—L is applied with overall quenching(Head without annealing)

Range of guaranteed shaft diameter precision (Details P.1301)
EPY—L ··· x1 max.10
T4 ··· x1 max.30

M SKH51 equivalent
H 58～60HRC

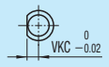
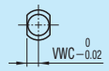
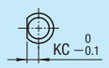
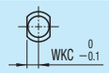
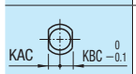
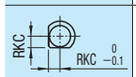
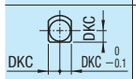
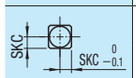
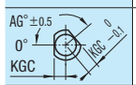
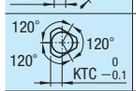
Range of guaranteed base material hardness (Details P.1303)

Order — Part Number — L
EPH—L5 — 210.00

Days to Ship — Quotation

Alterations — Part Number — L — (KC・WKC···etc.) — Quotation
EPH—L5 — 210.00 — TC3

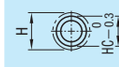
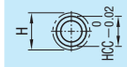
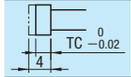
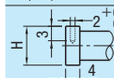
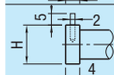
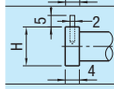
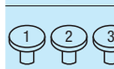
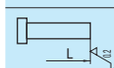
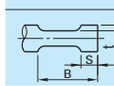
Alteration details P.53

Alterations	Code	Spec.	1Code
	VKC	Precision single flat cutting P/2≦VKC＜H/2	
	VWC	Precision two flats cutting P/2≦VWC＜H/2	
	KC	Single flat cutting P/2≦KC＜H/2	
	WKC	Two flats cutting P/2≦WKC＜H/2	
	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	Quotation
	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
	DKC	Three flats cutting P/2≦DKC＜H/2	
	SKC	Four flats cutting P/2≦SKC＜H/2	
	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation 0.05mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Alterations	Code	Spec.	1Code
	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	
	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3, P≧1.5	
	TC	TC=0.1mm increments 2.0≦TC＜4, P≧1.5 (Dimension L remains unchanged.) 4−TC≦Lmax.−L	
	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN・TMC・GVC not available.	
	NCW	Dowel hole boring+Spring pin driving Available when H≧4 Combination with other than NHC・NHN・TMC・GVC not available.	Quotation
	NCS	Dowel hole boring+Dowel pin driving Available when H≧4 Combination with other than NHC・NHN・TMC・GVC not available.	
	NHC	Numbering on the head How to order P.54 Available when H≧2 Combination with SKC not available.	
	NHN	Automatic sequential numbering on the head How to order P.54 Available when H≧2 Combination with SKC not available.	
	TMC	Lapping on the tip face Available when P≧0.6 EPY—L not available	
	GVC	S,B=1mm increments 2≦S≦10,S+5≦B≦30 Available when P≧3	

Price — Quotation

H	T	Part Number Type	Part Number P	L 0.01mm increments	U/Price 1～4
2	4	EPY—L	0.3 0.4 0.5 0.6 0.7 0.8 0.9 1	20.00～60.00	Quotation

H	T	Part Number Type	Part Number P	L 0.01mm increments Lmin.	L 0.01mm increments Lmax.	U/Price L40.00～100.00	L100.01～150.00	L150.01～200.00	L200.01～250.00	L250.01～300.00	L300.01～350.00
3	4	EPH—L (P 0 -0.005) EPHE—L (P −0.01 -0.02)	0.3	40.00	60.00	Quotation					
			0.4		100.00						
			0.5								
			0.6 0.7		150.00						
			0.8 0.9								
			1 1.1		200.00						
			1.2 1.3 1.4								
			1.5		250.00						
4			1.6								
			1.7 1.8 1.9		200.00						
			2		300.00						
5			2.1		250.00						
			2.2 2.3 2.4		200.00						
			2.5		300.00						
6			2.6		250.00						
			2.7 2.8 2.9		200.00						
			3		350.00						
7			3.1		250.00						
			3.2 3.3 3.4		200.00						
			3.5		350.00						
			3.6		250.00						
			3.7 3.8 3.9		200.00						
			4		350.00						
			4.1		250.00						
8			4.2 4.3 4.4		200.00						
			4.5		350.00						
			4.6		250.00						
			4.7 4.8 4.9		200.00						
			5		350.00						
9			5.1		250.00						
			5.5		350.00						
			5.6		250.00						
10			6		350.00						
			6.1		250.00						
			6.5		350.00						
			6.6		250.00						
11			7		350.00						
			7.1		250.00						
			7.5								
			7.6								
			8		350.00						
14			8.1		250.00						
			8.5 8.6								
			9		350.00						
15			9.1		250.00						
			9.5 9.6								
			10		350.00						
17			10.1		250.00						
			10.5 10.6								
			11 11.1								
			11.5 11.6								
			12		350.00						

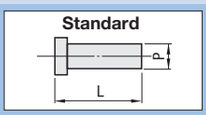
When the ejector pin's dimension L is less than 40mm, the length of b1 (guaranteed shaft diameter precision range) may be too short for your particular application. For such application, use EPY—L or core pins instead.
Please take the order for JIS head type EPHJ—L (P 0 -0.005) / EPHJE—L (P −0.01 -0.02) . P.59

ADD.SPEC Printed in Red

Dies Steel
SKD61 equivalent
+
Nitriding

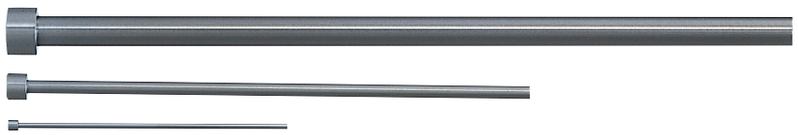
STRAIGHT EJECTOR PINS
—STANDARD—

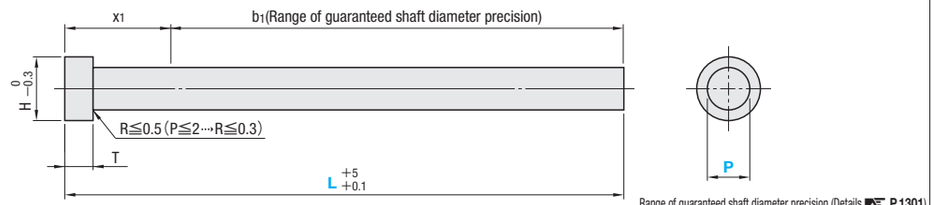
Standard



Non JIS material definition is listed on P.1351 - 1352

RoHS





Range of guaranteed shaft diameter precision (Details P.1301)
T4 ··· x_1 max.30
JIS ··· x_1 max.35

Part Number	Head thickness	T T
EPN	4mm(T4)	0 −0.02
EPJ	6・8mm (JIS)	0 −0.05

T P

L \ P	1 ～ 13	15 ～ 20	25
L≦500	— 0.01 — 0.02	— 0.01 — 0.03	— 0.01 — 0.04
L≧600	— 0.01 — 0.03	— 0.01 — 0.03	— 0.01 — 0.05

M SKD61 equivalent+Nitrided
H Surface base:900HV～
Base material:40～45HRC
Range of guaranteed base material hardness (Details P.1303)
Range of guaranteed surface hardness for nitriding (Details P.1303)

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	P	L Selection
3	4	—	—	EPN	—	1 1.1 1.2 1.3 1.4	100 150
						1.5	100 150 200
4						1.6 1.7 1.8 1.9	100 150 200
						2	100 150 200 250 300 350 400
5						2.1 2.2 2.3 2.4	100 150 200 250 300
						2.5	100 150 200 250 300 350 400
6						2.6 2.7 2.8 2.9	100 150 200 250 300
						3	100 150 200 250 300 350 400 450 500
7						3.1 3.2 3.3 3.4	100 150 200 250 300 350 400
						3.5	100 150 200 250 300 350 400 450 500
						3.6 3.7 3.8 3.9	100 150 200 250 300 350 400
8		8	6		EPJ	4	100 150 200 250 300 350 400 (500) (600)
						(4.1) (4.2) (4.3) (4.4)	200 300 400
						4.5	100 150 200 250 300 350 400 (500)
		9				(4.6) (4.7) (4.8) (4.9)	200 300 400
						5	100 150 200 250 300 350 400 500 (600)
9						(5.1) (5.2) (5.3) (5.4)	200 300 400
						5.5	100 150 200 250 300 350 400 500
		10				(5.6) (5.7) (5.8) (5.9)	200 300 400
						6	100 150 200 250 300 350 400 500 (600) (700) (800)
10		11				(6.1) (6.2) (6.3) (6.4)	200 300 400
						6.5	100 150 200 250 300 350 400 500 (600) (700)
						7	100 150 200 250 300 350 400 500 (600) (700) (800) (900) (1000)
11		13	8			8	100 150 200 250 300 350 400 (450) 500 (600) (700) (800) (900) (1000)
15		15				10	100 150 200 250 300 350 400 (450) 500 (600) (700) (800) (900) (1000)
17		17				12	100 150 200 250 300 350 400 (450) 500 (600) (700) (800) (900) (1000)
18		18				(13)	100 150 200 250 300 350 400 500
20		20				15	100 150 200 250 300 350 400 (450) 500 (600) (700) (800) (900) (1000)
21		21				16	100 150 200 250 300 350 400 500 (600) (700) (800) (900) (1000)
—	—	25		—		20	150 200 250 300 400 500 600 700 800 900 1000
		30				25	200 300 400 500 600 700 800 900 1000

The P dimension enclosed in brackets ( ) is applicable only for EPN.
The L dimension enclosed in brackets ( ) is applicable only for EPJ.

Order — Part Number — L
EPN 3 — 100

Days to Ship — Quotation

Alterations — Part Number — L — (KC・WKC…etc.)
EPN 16 — 500 — NC

Quotation

Alteration details P.53

Alterations	Code	Spec.	1Code
KC−0.1	KC	Single flat cutting P/2≦KC＜H/2	Quotation
WKC−0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC−0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
RKC−0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC DKC−0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC−0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC AKG−0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° 120° KTC−0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting
(1)To align the key flat with the shaft diameter
Unit of designation 0.05mm increments possible
(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Price — Quotation

Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	
TC T	TC	TC=0.1mm increments T/2≦TC＜T, P≧1.5 Dimension L becomes shorter by (T−TC)	
H d +0.1 0 T	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN not available. (T 4 6 8 / d 2 3 / ℓ 3 5)	
H d T	NCW	Dowel hole boring+Spring pin driving Available when H≧4 Combination with other than NHC・NHN not available. (T 4 6 8 / d 2 3 / ℓ1 5)	Quotation
H d T	NCS	Dowel hole boring+Dowel pin driving Available when H≧4 Combination with other than NHC・NHN not available. (T 4 6 8 / d 2 3 / ℓ2 5)	
217	NHC	Numbering on the head How to order P.54 Combination with SKC・MC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC・MC not available.	
MC M×1	MC	Head tapping Available for EPJ when P≧8 Combination with any other alteration not available. (P 8 10 12・15 16～25 / M M4 M5 M6 M8)	

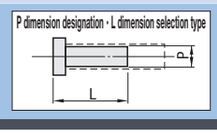
Straight Ejector Pins

Dies Steel SKD61 equivalent + Nitriding

Dies Steel
SKD61 equivalent
+
Nitriding

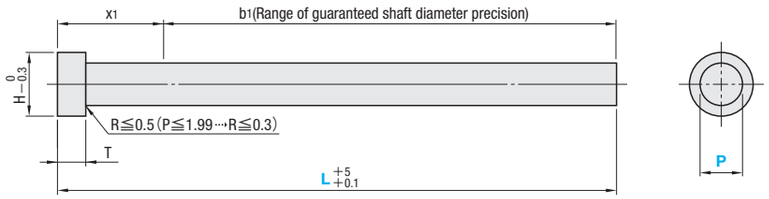
STRAIGHT EJECTOR PINS

—P DIMENSION DESIGNATION • L DIMENSION SELECTION TYPE—



Non JIS material definition is listed on P.1351 - 1352

RoHS



Range of guaranteed shaft diameter precision (Details P.1301)

Head thickness	L	x1 max.
T4	100～300	30
JIS	100～300	35
T4・JIS	350	210

Part Number	Head thickness	T T
EPNG	4mm(T4)	0 −0.02
EPJG	6・8mm(JIS)	0 −0.05

T P

P≦12.00	P>12.00
−0.01 −0.02	−0.01 −0.03

M SKD61 equivalent+Nitrided
H Surface base:900HV～
Base materials:40～45HRC
Range of guaranteed base material hardness (Details P.1303)
Range of guaranteed surface hardness for nitriding (Details P.1303)

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	Part Number No.	L Selection	P 0.01mm increments
3	4	—	—	EPNG	—	1.5	100 150 200	1.00～ 1.49
4						2	100 150 200 250 300 350	1.50～ 1.99
5						2.5		2.00～ 2.49
6						3	100 150 200 250 300 350	2.50～ 2.99
7						3.5		3.00～ 3.49
8		8	6		EPJG	4	100 150 200 250 300 350	3.50～ 3.99
						4.5		4.00～ 4.49
		9				5	100 150 200 250 300 350	4.50～ 4.99
9						5.5	100 150 200 250 300 350	5.00～ 5.49
		10				6	100 150 200 250 300 350	5.50～ 5.99
10		11				6.5		6.00～ 6.49
						7	100 150 200 250 300 350	6.50～ 6.99
11		13	8			8	100 150 200 250 300 350	7.00～ 7.99
15		15				10		8.00～ 9.99
17		17				12	100 150 200 250 300 350	10.00～11.99
20		20				15		12.00～14.99
21		21				16	100 150 200 250 300 350	15.00～15.99
—	—	25		—		20	150 200 250 300	16.00～19.99
		30				25	200 300	20.00～24.99

Since nitriding is performed after P dimension machining, the head may also be nitrided.
For JIS head type less than No.4 is T=4, please place the order for 4mm head type of EPNG.

Order — Part Number — L — P
EPJG 6 — 200 — P5.61

Days to Ship — Quotation

Alterations — Part Number — L — P — (KC・WKC···etc.)
EPJG 4.5 — 200 — P4.23 — WKC2.115

Alteration details P.53

Alterations	Code	Spec.	1Code
KC −0.1	KC	Single flat cutting P/2≦KC＜H/2	Quotation
WKC −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
RKC −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC KGC −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° 120° KTC −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting
(1)To align the key flat with the shaft diameter
Unit of designation 0.005mm increments possible
(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

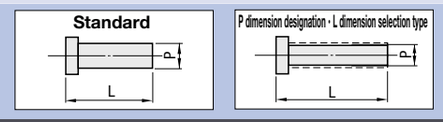
Alterations	Code	Spec.	1Code
H HC −0.3	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	Quotation
TC T	TC	TC=0.1mm increments T/2≦TC＜T, P≧1.5 Dimension L becomes shorter by (T−TC) T−TC≦Lmax.−L	
H d +0.1 0 T	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN not available. (T: 4 d: 2 ℓ: 3 / 6 8 d: 3 ℓ: 5)	
H d ℓ1 T	NCW	Dowel hole boring+ Spring pin driving Available when H≧4 Combination with other than NHC・NHN not available. (T: 4 d: 2 ℓ1: 3 / 6 8 d: 3 ℓ1: 5)	
H d ℓ2 T	NCS	Dowel hole boring+ Dowel pin driving Available when H≧4 Combination with other than NHC・NHN not available. (T: 4 d: 2 ℓ2: 3 / 6 8 d: 3 ℓ2: 5)	
217	NHC	Numbering on the head How to order P.54 Combination with SKC・MC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC・MC not available.	
MC M×1	MC	Head tapping Available when P≧8.00 for EPJG Combination with any other alteration not available. (P 8.00～9.99: M4 / P10.00～11.99: M5 / P12.00～15.99: M6 / P16.00～24.99: M8)	

Price — Quotation

Dies Steel
SKD61 equivalent
4mm Head

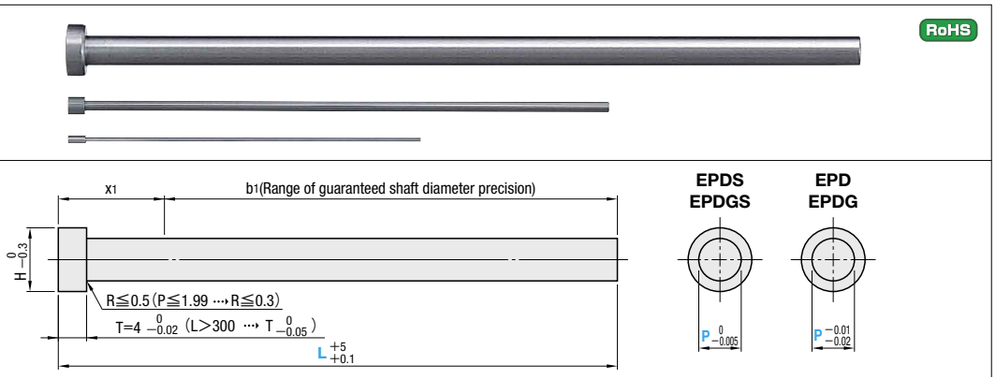
STRAIGHT EJECTOR PINS

—STANDARD／P DIMENSION DESIGNATION • L DIMENSION SELECTION TYPE—



Non JIS material definition is listed on P.1351 - 1352

RoHS



Part Number	Head thickness	T P
EPDS (Standard)	4mm(T4)	0 −0.005
EPDGS (P dimension designation・L dimension selection type)		
EPD (Standard)		−0.01 −0.02
EPDG (P dimension designation・L dimension selection type)		

・Standard
x1 max.=30

・P Dimension Designation・L Dimension Selection Type

L	x1 max.
100・150	30
200	60
250	110
300	160
400	260
500	360

Range of guaranteed shaft diameter precision (Details P.1301)

M SKD61 equivalent
H 50～55HRC

Range of guaranteed base material hardness (Details P.1303)

■Standard

H	T	Part Number Type	P	L Selection						
3	4	EPDS (P 0 −0.005)	1.5	100	150	200				
4			2	100	150	200	250			
5			2.5	100	150	200	250			
6			3	100	150	200		300		
7			3.5	100	150	200		300		
			4	100	150	200		300		
8			4.5	100		200		300		
			5	100	150	200		300	400	500
9			5.5	100		200		300	400	500
			6	100	150	200		300	400	500
10		EPD (P −0.01 −0.02)	6.5	100		200		300	400	500
			7	100	150	200		300	400	500
11			8	100	150	200		300	400	500
14			9	100		200		300	400	500
15			10	100	150	200		300	400	500
17			12	100		200		300	400	500
18			13			200		300	400	500

■P Dimension Designation・L Dimension Selection Type

H	T	Part Number Type	No.	L Selection						P 0.01mm increments
3	4	EPDGS (P 0 −0.005)	1.5	100	150	200				1.00～ 1.49
4			2	100	150	200	250			1.50～ 1.99
5			2.5							2.00～ 2.49
6			3							2.50～ 2.99
7			3.5	100	150	200		300		3.00～ 3.49
			4							3.50～ 3.99
8			4.5	100		200		300		4.00～ 4.49
			5	100	150	200		300		4.50～ 4.99
9			5.5	100		200		300		5.00～ 5.49
		EPDG (P −0.01 −0.02)	6	100	150	200		300	400 500	5.50～ 5.99
10			6.5	100		200		300	400 500	6.00～ 6.49
			7	100	150	200		300	400 500	6.50～ 6.99
11			8	100	150	200		300	400 500	7.00～ 7.99
15			10							8.00～ 9.99
17			12	100		200		300	400 500	10.00～11.99
18			13			200		300	400 500	12.00～12.99

When L≧200, Please place your order after confirmation of the range of guaranteed shaft diameter precision. (Details P.1301)

Part Number — L — P
EPDG 12 — 300 — P11.00

Quotation

Alterations

Part Number — L — P — (KC・WKC···etc.)
EPDG 12 — 300 — P11.00 — HC15

Alteration details P.53

Alterations	Code	Spec.	1Code
KC 0 −0.1	KC	Single flat cutting P/2≦KC＜H/2	Quotation
WKC 0 −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC 0 −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
RKC 0 −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC 0 −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC 0 −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC 0 −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° 120° KTC 0 −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
EPDS・EPD
0.05mm increments possible
EPDGS・EPDG
0.005mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

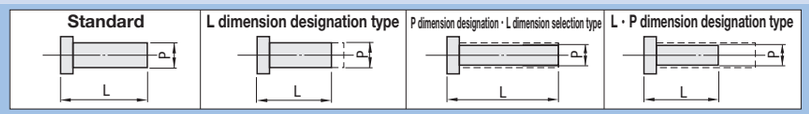
Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P+1≦HC＜H EPDGS・EPDG···P≧1.5	Quotation
H HCC 0 −0.02	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3 EPDGS・EPDG···P≧1.5	
TC 4	TC	TC=0.1mm increments 2.0≦TC＜4 Dimension L becomes shorter by (4−TC) EPDGS,EPDG···P≧1.5,4−TC≦Lmax.−L	
H 3 2 +0.1 0 4	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN not available.	
H 5 2 4	NCW	Dowel hole boring+Spring pin driving Available when H≧4 Combination with other than NHC・NHN not available.	
217	NHC	Numbering on the head How to order P.54 Combination with SKC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC not available.	

Price Quotation

Prehardened Dies Steel SKD61 equivalent JIS head

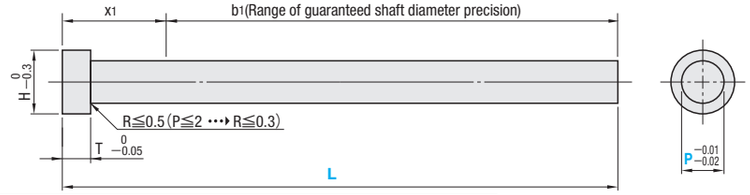
STRAIGHT EJECTOR PINS

—STANDARD／L DIMENSION DESIGNATION TYPE／P DIMENSION DESIGNATION・L DIMENSION SELECTION TYPE／L・P DIMENSION DESIGNATION TYPE—



Non JIS material definition is listed on P.1351 - 1352

RoHS



Part Number		Head thickness	T	L	Tip Face Roughness
EPAJ	(Standard)	4・6・8mm (JIS)	+5 +0.1		—
EPAJG	(P dimension designation・L dimension selection type)				
EPAJ—L	(L dimension designation type)		+0.05 0		
EPAJB	(L・P dimension designation type)				

*EPAJ-L L＞500 ⋯▸ $L^{+0.5}_{0}$

Range of guaranteed shaft diameter precision (Details P.1301)
x1 max.＝35

M SKD61 equivalent (Prehardened)
H 40～45HRC

Range of guaranteed base material hardness (Details P.1303)

■ Standard

H	T	Part Number Type	Part Number P	L Selection
4	4	EPAJ	2	100 200
5			2.5	
6			3	100 200 300
7			3.5	
8			4	
	6		4.5	
9			5	
10			6	100 200 300 500 800 1000
11			7	
13	8		8	
15			10	
17			12	200 300 500 800 1000

■ P Dimension Designation・L Dimension Selection Type

H	T	Part Number Type	Part Number No.	L Selection	P 0.01mm increments
4	4	EPAJG	2	100 200	1.50～ 1.99
5			2.5		2.00～ 2.49
6			3	100 200 300	2.50～ 2.99
7			3.5		3.00～ 3.49
8	6		4		3.50～ 3.99
			4.5		4.00～ 4.49
9			5		4.50～ 4.99
10			6	100 200 300	5.00～ 5.99
11			7		6.00～ 6.99
13	8		8		7.00～ 7.99
15			10		8.00～ 9.99
17			12	200 300	10.00～11.99

■ L Dimension Designation Type

H	T	Part Number Type	Part Number P	L 0.01mm increments
4	4	EPAJ—L	2	40.00～ 200.00
5			2.5	
6			3	40.00～ 300.00
7			3.5	
8			4	
	6		4.5	
9			5	
10			6	40.00～1000.00
11			7	
13	8		8	
15			10	
17			12	

■ L・P Dimension Designation Type

H	T	Part Number Type	Part Number No.	0.01mm increments L	0.01mm increments P
4	4	EPAJB	2	40.00～200.00	1.50～ 1.99
5			2.5		2.00～ 2.49
6			3	40.00～300.00	2.50～ 2.99
7			3.5		3.00～ 3.49
8	6		4		3.50～ 3.99
			4.5		4.00～ 4.49
9			5		4.50～ 4.99
10			6		5.00～ 5.99
11			7		6.00～ 6.99
13	8		8		7.00～ 7.99
15			10		8.00～ 9.99
17			12		10.00～11.99

Order

Part Number	—	L	—	P

(Standard) EPAJ 3 — 100
(L dimension designation type) EPAJ—L 3 — 150.35
(P dimension designation・L dimension selection type) EPAJG 4 — 100 — P3.99
(L・P dimension designation type) EPAJB 4 — 180.05 — P3.99

Days to Ship Quotation

Alterations

Part Number — L — P — (KC・WKC⋯etc.)
EPAJB 5 — 125.61 — P4.97 — RKC2.485

Quotation

Alterations	Code	Spec.	1Code
KC 0 −0.1	KC	Single flat cutting P/2≦KC＜H/2	Quotation
WKC 0 −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC 0 −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
RKC 0 −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC DKC 0 −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC 0 −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC KGC 0 −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° 120° KTC 0 −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
EPAJ・EPAJ-L
0.05mm increments possible

EPAJG・EPAJB
0.005mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Price Quotation

Alteration details P.53

Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P＋1≦HC＜H	Quotation
TC T	TC	TC=0.1mm increments T/2≦TC＜T EPAJ,EPAJG ⋯▸ Dimension L becomes shorter by (T—TC) EPAJ—L,EPAJB ⋯▸ T—TC≦Lmax.—L (Dimension L remains unchanged.)	
H d +0.1 0 ℓ T	NC	Dowel hole boring Available when H≧4 Combination with other than NHC・NHN not available.	
H d ℓ1 T	NCW	Dowel hole boring＋Spring pin driving Available when H≧4 Combination with other than NHC・NHN not available.	
217	NHC	Numbering on the head How to order P.54 Combination with SKC・MC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC・MC not available.	
MC M×1	MC	Head tapping Available when P≧8.00 Combination with any other alteration not available.	

T	d	ℓ
4	2	3
6	3	5
8		

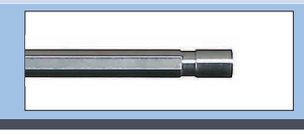
T	d	ℓ1
4	2	5
6	3	
8		

P	M
P 8.00～ 9.99	M4
P10.00～11.99	M5
P12	M6

High Speed Steel
SKH51 equivalent

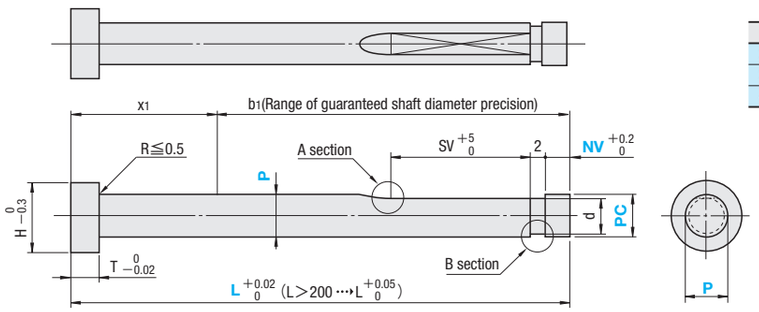
STRAIGHT EJECTOR PINS WITH GAS VENT

—L・PC DIMENSION DESIGNATION TYPE／L・P・PC DIMENSION DESIGNATION TYPE—



Non JIS material definition is listed on P.1351 - 1352

RoHS



P	d
2 ～ 2.49	P—0.2
2.50～ 3.99	P—0.4
4.00～12	P—0.6

L	SV
40.00～ 60.00	15
60.01～200.00	30
200.01～350.00	50

Range of guaranteed shaft diameter precision (Details P.1301)
- L・PC Dimension Designation Type
  T4 ··· x1 max.30
  JIS ··· x1 max.35
- L・P・PC Dimension Designation Type

Head thickness	L	x1 max.
T4	40.00 ～ 200.00	30
JIS	40.00 ～ 200.00	35
T4 ・ JIS	200.01 ～ 250.00	110
	250.01 ～ 300.00	160
	300.01 ～ 350.00	210

(The guarantee range of shaft diameter precision is the value of shaft diameter except gas vent.)

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)

Part Number	Head thickness	T P	T PC
GVB—EPH—L GVB—EPHB	4mm(T4)	0 −0.005	0 −0.005
GVB—EPHE—L GVB—EPHBE		−0.01 −0.02	
GVB—EPHJ—L GVB—EPHJB	6・8mm(JIS)	0 −0.005	
GVB—EPHJE—L GVB—EPHJBE		−0.01 −0.02	

Close-up A section

Close-up B section

■ L・PC Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	P	0.01mm increments L	0.01mm increments PC	0.5mm increments NV
4	4	—	—	GVB—EPH—L GVB—EPHE—L	—	2	40.00～300.00	(GVB — EPH — L GVB — EPHJ — L) P—0.08≦85＜P	0.5～8.0
5						2.5			
6						3			
7						3.5			
8		8	6		GVB—EPHJ—L GVB—EPHJE—L	4			2.0～10.0
						4.5	40.00～300.00(350.00)		
9		9				5	40.00～350.00	(GVB — EPHE — L GVB — EPHJE — L) P—0.08≦85＜P—0.02	
		10				5.5			
10		11				6			
						6.5			
11		13				7			
15		15	8			8			
17		17				10			
						12			

When P=PC; refer to P.87 L in ( ) is applicable only for head thickness 4mm type.

■ L・P・PC Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	No.	0.01mm increments L	0.01mm increments P	0.01mm increments PC	0.5mm increments NV
5	4	—	—	GVB—EPHB GVB—EPHBE	—	2.5	40.00～300.00	2.00～ 2.49	(GVB — EPHB GVB — EPHJB) P—0.08≦85＜P	0.5～ 8.0
6						3		2.50～ 2.99		
7						3.5		3.00～ 3.49		2.0～10.0
8		8	6		GVB—EPHJB GVB—EPHJBE	4		3.50～ 3.99		
						4.5	40.00～300.00(350.00)	4.00～ 4.49		
9		9				5	40.00～350.00	4.50～ 4.99	(GVB — EPHBE GVB — EPHJBE) P—0.08≦85＜P—0.02	
		10				5.5		5.00～ 5.49		
10		11				6		5.50～ 5.99		
						6.5		6.00～ 6.49		
11		13				7		6.50～ 6.99		
15		15	8			8		7.00～ 7.99		
17		17				10		8.00～ 9.99		
						12		10.00～11.99		

When P=PC; refer to P.87 L in ( ) is applicable only for head thickness 4mm type.

Order

Part Number	L	P	PC	NV
GVB—EPH—L5	210.00		PC4.96	NV2.0
GVB—EPHB3	148.36	P2.96	PC2.94	NV2.0

Days to Ship — Quotation

Alterations

Part Number	L	P	PC	NV	(VKC・VWC···etc.)
GVB—EPHB3	148.36	P2.96	PC2.94	NV2.0	KC1.48

Quotation

Alteration details P.53

Alterations	Code	Spec.	1Code
VKC 0 −0.02	VKC	Precision single flat cutting P/2≦VKC＜H/2	Quotation
VWC 0 −0.02	VWC	Precision two flats cutting P/2≦VWC＜H/2	
KC 0 −0.1	KC	Single flat cutting P/2≦KC＜H/2	
WKC 0 −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC 0 −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	
RKC 0 −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC 0 −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC 0 −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 KGC 0 −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° KTC 0 −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
GVB—EPH—L・GVB—EPHE—L
GVB—EPHJ—L・GVB—EPHJE—L
0.05mm increments possible

GVB—EPHB・GVB—EPHBE
GVB—EPHJB・GVB—EPHJBE
0.005mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Flat cutting position is set at 90° of SV dimension in counter clockwise direction.

Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P+1≦HC＜H	Quotation
H HCC 0 −0.02	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3	
T TC 0 −0.02	TC	TC=0.1mm increments T/2≦TC＜T (Dimension L remains unchanged.) T−TC≦Lmax.−L	
217	NHC	Numbering on the head How to order P.54 Combination with SKC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC not available.	

Example

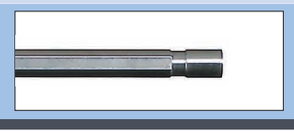
■ Characteristics
Let gas out from the inside of the cavity via the clearance around the ejector pin.

Price — Quotation

High Speed Steel
SKH51 equivalent

STRAIGHT EJECTOR PINS WITH GAS VENT

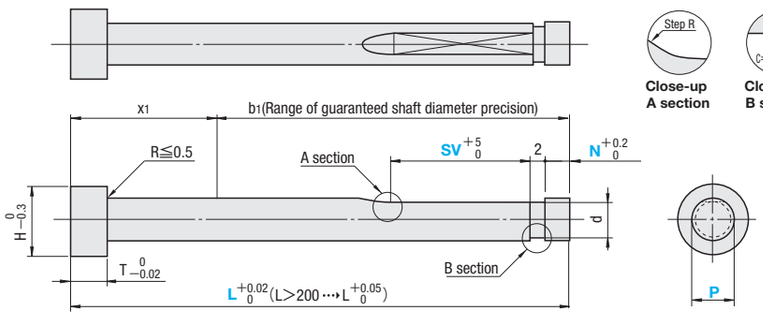
—L DIMENSION DESIGNATION TYPE／L・P DIMENSION DESIGNATION TYPE—



Non JIS material definition is listed on P.1351 - 1352

Refer to P.85 when tip diameter dimension designated.

RoHS



Close-up A section

Close-up B section

P	d
2 ～ 2.49	P−0.2
2.50～ 3.99	P−0.4
4.00～12	P−0.6

Range of guaranteed shaft diameter precision (Details P.1301)

- L Dimension Designation Type
  T4 ··· x1 max.30
  JIS ··· x1 max.35
- L・P Dimension Designation Type

Head thickness	L	x1 max.
T4	40.00～200.00	30
JIS	40.00～200.00	35
T4・JIS	200.01～250.00	110
	250.01～300.00	160
	300.01～350.00	210

(The guarantee range of shaft diameter precision is the value of shaft diameter except gas vent.)

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)

Part Number	Head thickness	Part Number	Head thickness	Type	T P	Tip Face Roughness
GV−EPH−L	4mm (T4)	GV−EPHJ−L	6・8mm (JIS)	L dimension designation type	0 −0.005 −0.01 −0.02	—
GV−EPHE−L		GV−EPHJE−L				
GV−EPHB		GV−EPHJB		L・P dimension designation type	0 −0.005 −0.01 −0.02	
GV−EPHBE		GV−EPHJBE				

■L Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	P	0.01mm increments L	0.5mm increments N	0.5mm increments SV
4	4	—	—	GV−EPH−L GV−EPHE−L	—	2	40.00～300.00	0.5～8.0 L−(2+SV+N)≧10	2.0～30.0 L−(2+SV+N)≧10
5						2.5			
6						3			
7						3.5			
8		8	6		GV−EPHJ−L GV−EPHJE−L	4			
						4.5	40.00～300.00(350.00)		
9		9				5	40.00～350.00	2.0～10.0 L−(2+SV+N)≧10	2.0～50.0 L−(2+SV+N)≧10
		10				5.5			
10		11				6			
						6.5			
11		13	8			7			
15		15				8			
17		17				10			
						12			

(L in ( ) is applicable only for head thickness 4mm type.)

■L・P Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	No.	0.01mm increments L	0.01mm increments P	0.5mm increments N	0.5mm increments SV
5	4	—	—	GV−EPHB GV−EPHBE	—	2.5	40.00～300.00	2.00～ 2.49	0.5～8.0 L−(2+SV+N)≧10	2.0～30.0 L−(2+SV+N)≧10
6						3		2.50～ 2.99		
7						3.5		3.00～ 3.49		
8		8	6		GV−EPHJB GV−EPHJBE	4		3.50～ 3.99		
						4.5	40.00～300.00(350.00)	4.00～ 4.49		
9		9				5	40.00～350.00	4.50～ 4.99		
		10				5.5		5.00～ 5.49	2.0～10.0 L−(2+SV+N)≧10	2.0～50.0 L−(2+SV+N)≧10
10		11				6		5.50～ 5.99		
						6.5		6.00～ 6.49		
11		13	8			7		6.50～ 6.99		
15		15				8		7.00～ 7.99		
17		17				10		8.00～ 9.99		
						12		10.00～11.99		

(L in ( ) is applicable only for head thickness 4mm type.)

Order

Part Number	L	P	N	SV
GV−EPH−L5	210.00		N2.0	SV4.0
GV−EPHB3	148.36	P2.96	N2.0	SV4.0

Days to Ship

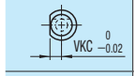
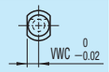
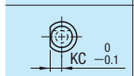
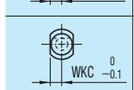
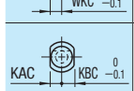
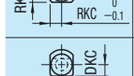
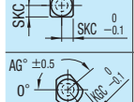
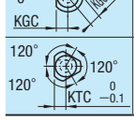
Quotation

Alterations

Part Number	L	P	N	SV	(KC・WKC···etc.)
GV−EPHB3	148.36	P2.96	N2.0	SV4.0	KC1.48

Quotation

Alteration details P.53

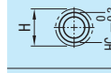
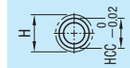
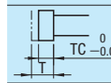
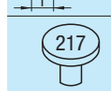
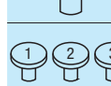
Alterations	Code	Spec.	1Code
	VKC	Precision single flat cutting P/2≦VKC＜ H/2	
	VWC	Precision two flats cutting P/2≦VWC＜H/2	
	KC	Single flat cutting P/2≦KC＜H/2	
	WKC	Two flats cutting P/2≦WKC＜H/2	
	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	Quotation
	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
	DKC	Three flats cutting P/2≦DKC＜H/2	
	SKC	Four flats cutting P/2≦SKC＜H/2	
	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
GV−EPH−L・GV−EPHE−L
GV−EPHJ−L・GV−EPHJE−L
0.05mm increments possible

GV−EPHB・GV−EPHBE
GV−EPHJB・GV−EPHJBE
0.005mm increments possible

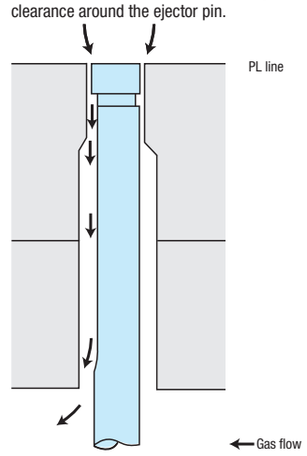
(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Alterations	Code	Spec.	1Code
	HC	HC=0.1mm increments P+1≦HC＜H	Quotation
	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3	
	TC	TC=0.1mm increments T/2≦TC＜T (Dimension L remains unchanged.) T−TC≦Lmax.−L	
	NHC	Numbering on the head How to order P.54 Combination with SKC not available.	
	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC not available.	
	TMC	Lapping on the tip face. Details P.54	

Example

■Characteristics

Let gas out from the inside of the cavity via the clearance around the ejector pin.



Price

Quotation

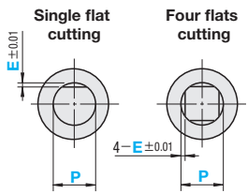
High Speed Steel
SKH51 equivalent

STRAIGHT EJECTOR PINS WITH GAS VENT

—L DIMENSION DESIGNATION／L・P DIMENSION DESIGNATION WITH CUTTING FACETS TYPE—

Non JIS material definition is listed on P.1351 - 1352

RoHS



Close-up A section

Limit of E±0.01 is within 10mm from the tip.

Part Number		Head thickness	T P
Single flat cutting	Four flats cutting		
GW—EPH—L	GWS—EPH—L	4mm(T4)	0 −0.005
GW—EPHB	GWS—EPHB		
GW—EPHE—L	GWS—EPHE—L		−0.01 −0.02
GW—EPHBE	GWS—EPHBE		
GW—EPHJ—L	GWS—EPHJ—L	6・8mm(JIS)	0 −0.005
GW—EPHJB	GWS—EPHJB		
GW—EPHJE—L	GWS—EPHJE—L		−0.01 −0.02
GW—EPHJBE	GWS—EPHJBE		

Range of guaranteed shaft diameter precision (Details P.1301)
- L Dimension Designation Type T4 ⋯ x_1 max.30
- L・P Dimension Designation Type JIS ⋯ x_1 max.35

Head thickness	L	x_1 max.
T4	40.00～200.00	30
JIS	40.00～200.00	35
T4・JIS	200.01～250.00	110
	250.01～300.00	160
	300.01～350.00	210

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)
(The guarantee range of shaft diameter precision is the value of shaft diameter except gas vent.)

■L Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	P	L	E	SV
3	4	—	—	Single flat cutting GW—EPH—L GW—EPHE—L	—	0.6 0.7 0.8 0.9	40.00～150.00	Single flat cutting 0.02～0.05	L / SV
						1 1.2	40.00～200.00		40.00～ 60.00 / 15
						1.5	(40.00)60.00～250.00		60.01～200.00 / 30
4						2	(40.00)60.00～300.00		200.01～350.00 / 50
5						2.5			
6				Single flat cutting GW—EPH—L GW—EPHE—L	Single flat cutting GW—EPHJ—L GW—EPHJE—L	3 3.5	(40.00)60.00～350.00	Four flats cutting 0.03～0.05	
7						4			
8		8	6			4.5			
9		9		Four flats cutting GWS—EPH—L GWS—EPHE—L	Four flats cutting GWS—EPHJ—L GWS—EPHJE—L	5			
		10				5.5			
10		11				6 6.5			
11		13	8			7			
15		15				8			
17		17				10 12			

Dimension L figures in parenthesis represents for single flat cutting. L dimension is up to 300 for head thickness JIS of P4.5.

■L・P Dimension Designation Type

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	No.	L	P	E	SV
3	4	—	—	Single flat cutting GW—EPHB GW—EPHBE	—	0.7	40.00～100.00	0.60～ 0.69	Single flat cutting 0.02～0.05	L / SV
						0.8 0.9	40.00～150.00	0.70～ 0.79 0.80～ 0.89		40.00～ 60.00 / 15
						1	40.00～200.00	0.90～ 0.99		60.01～200.00 / 30
						1.5	(40.00)60.00～250.00	1.20～ 1.49		200.01～350.00 / 50
4						2	(40.00)60.00～300.00	1.50～ 1.99		
5						2.5		2.00～ 2.49		
6				Single flat cutting GW—EPHB GW—EPHBE	Single flat cutting GW—EPHJB GW—EPHJBE	3		2.50～ 2.99		
7						3.5		3.00～ 3.49		
8		8	6			4		3.50～ 3.99		
9		9		Four flats cutting GWS—EPHB GWS—EPHBE	Four flats cutting GWS—EPHJB GWS—EPHJBE	4.5		4.00～ 4.49	Four flats cutting 0.03～0.05	
		10				5		4.50～ 4.99		
10		11				5.5		5.00～ 5.49		
						6		5.50～ 5.99		
11		13	8			6.5	(40.00)60.00～350.00	6.00～ 6.49		
15		15				7		6.50～ 6.99		
17		17				8		7.00～ 7.99		
						10		8.00～ 9.99		
						12		10.00～11.99		

Dimension L figures in parenthesis represents for single flat cutting. L dimension is up to 300 for head thickness JIS of No.4.5.

Order

Part Number	L	P	E
GW—EPH—L5	210.00		E0.03
GWS—EPHB6	230.00	P5.50	E0.03

Days to Ship: Quotation

Alterations

Part Number	L	P	E	(KC・WKC⋯etc.)
GW—EPHB3	148.36	P2.96	E0.03	KC1.48

Quotation

Alteration details P.53

Alterations	Code	Spec.	1Code
VKC 0 −0.02	VKC	Precision single flat cutting P/2≦VKC＜H/2	
WC 0 −0.02	VWC	Precision two flats cutting P/2≦VWC＜H/2	
KC 0 −0.1	KC	Single flat cutting P/2≦KC＜H/2	
WKC 0 −0.1	WKC	Two flats cutting P/2≦WKC＜H/2	
KAC KBC 0 −0.1	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2	Quotation
RKC RKC 0 −0.1	RKC	Two flats (right angled) cutting P/2≦RKC＜H/2	
DKC DKC DKC 0 −0.1	DKC	Three flats cutting P/2≦DKC＜H/2	
SKC SKC 0 −0.1	SKC	Four flats cutting P/2≦SKC＜H/2	
AG° ±0.5 0° KGC KGC 0 −0.1	KGC	Two flats (angled) cutting P/2≦KGC＜H/2 AG=1° increments 0＜AG＜360	
120° 120° 120° KTC 0 −0.1	KTC	Three flats cutting at 120° P/2≦KTC＜H/2	

About Designation Unit for Key Flat Cutting

(1)To align the key flat with the shaft diameter
Unit of designation
L Dimension Designation Type 0.05mm increments possible

L・P Dimension Designation Type 0.005mm increments possible

(2)To designate arbitrary key flat dimensions
Unit of designation 0.1mm

Flat cutting position is set at 90° of cutting facet in counterclockwise direction.

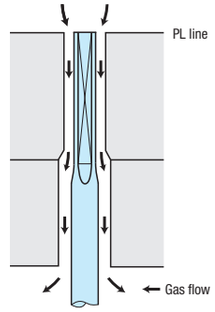
Alterations	Code	Spec.	1Code
H HC 0 −0.3	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	Quotation
H HCC 0 −0.02	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3, P≧1.5	
T TC 0 −0.02	TC	TC=0.1mm increments T/2≦TC＜T, P≧1.5 (Dimension L remains unchanged) T−TC≦Lmax.−L	
217	NHC	Numbering on the head How to order P.54 Combination with SKC not available.	
1 2 3	NHN	Automatic sequential numbering on the head How to order P.54 Combination with SKC not available.	

Price: Quotation

Example

■Characteristics

Let gas out from the inside of the cavity via the clearance around the ejector pin.



High Speed Steel
SKH51 equivalent
4mm head

EJECTOR PINS WITH Z GROOVE PROCESSED

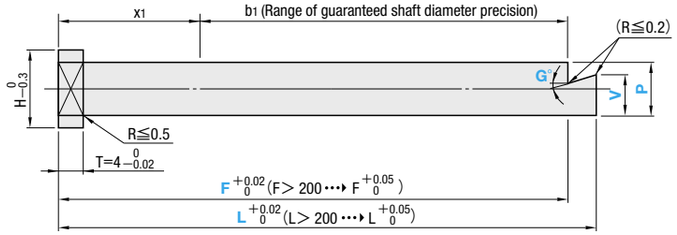
—L DIMENSION DESIGNATION TYPE—

L dimension designation type

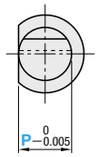
Non JIS material definition is listed on P.1351 - 1352

RoHS

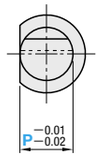
Select a tip shape



Z—EPH—L



Z—EPHE—L



To determine the shape position, key flat cutting is made at the standard 0°

Part Number	Head thickness	T P	T G	T V
Z—EPH—L	4mm(T4)	0 −0.005	±30'	±0.05
Z—EPHE—L		−0.01 −0.02		

V—(L—F)tanG≧1

Range of guaranteed shaft diameter precision (Details P.1301)
T4 ••• x1 max.30

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)

H	T	Part Number Type	P	0.01mm increments L	0.5mm increments V	1° increments G°	0.01mm increments F
4	4	Z—EPH—L Z—EPHE—L	2	50.00～300.00	1.5≦V<P	0～45	L—F≦10
5			2.5				
6			3				
7			4	50.00～350.00			
8			5				
9			6				
10			7				
11			8				

V—(L—F)tanG≧1

Order

Part Number						
Type	P	— L	— V	— G	— F	
Z—EPH—L	5	— 150.00	— V2.0	— G5	— F145.00	

Days to Ship: Quotation

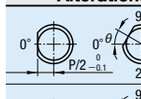
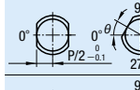
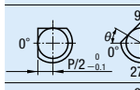
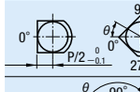
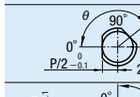
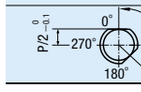
Price: Quotation

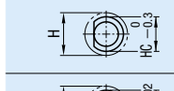
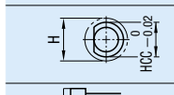
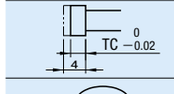
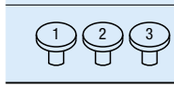
Alterations

Part Number	— L	— V	— G	— F	— (AKC・AWC···etc.)
Z—EPH—L5	— 150.00	— V2.0	— G5	— F145.00	— TC2

Quotation

Alteration details P.53

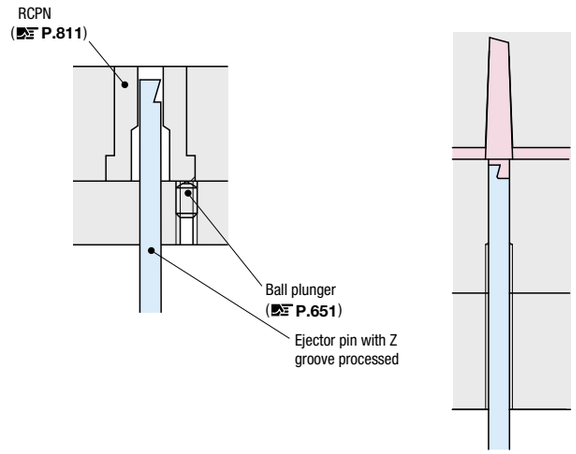
Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0<AKC<360 No need to designate AKC0	
	AWC	AWC=1° increments 0≦AWC<360	
	ARC	ARC=1° increments 0≦ARC<360	Quotation
	ADC	ADC=1° increments 0≦ADC<360	
	KGA	KGA=1° increments 0<KGA<360	
	KGB	KGB=1° increments 0<KGB<360	

Alterations	Code	Spec.	1Code
	KAC KBC	Varied width parallel flats cutting P/2≦KAC<H/2 KBC=0.1mm increments only KAC<KBC<H/2 Combination with other key flat cutting not available	
	HC	HC=0.1mm increments P+1≦HC<H	
	HCC	HCC=0.1mm increments P+1≦HCC<H−0.3	Quotation
	TC	TC=0.1mm increments 2≦TC<4 (Dimensions L and F remain unchanged) 4−TC≦Lmax.−L	
	NHC	Numbering on the head How to order P.54	
	NHN	Automatic sequential numbering on the head How to order P.54	

Example

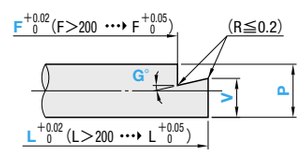
■Characteristics

Z groove ejector pins have the function of sprue lock by undercutting of the tip groove.



■Ejector Pins with Tip Processed

5A (Z groove)



- 0° ≦G≦45°
- 1.5≦V<P
- L—F≦10
- V—(L—F)tanG≧1
- R designation not available

SKH51 equivalent L dimension designation type P.97

SKH51 equivalent L・P dimension designation type P.99

Straight Ejector Pins

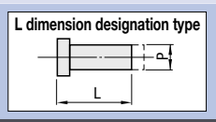
High Speed Steel SKH51 equivalent

Dies Steel
SKD61 equivalent
+
Nitriding

STRAIGHT EJECTOR PINS WITH TIP PROCESS

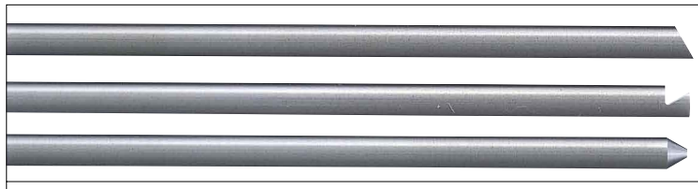
—L DIMENSION DESIGNATION TYPE—

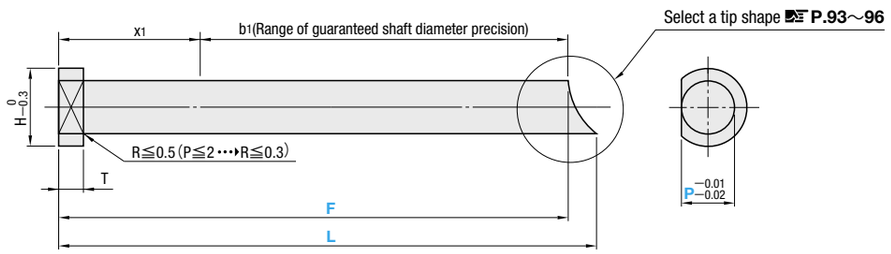
L dimension designation type



Non JIS material definition is listed on P.1351 - 1352

RoHS





To determine the shape position, key flat cutting is made at the standard 0°

Part Number	Head thickness	T T	T P
EPN□A	4mm(T4)	0 −0.02	−0.01 −0.02
EPJ□A	6・8mm(JIS)	0 −0.05	

Range of guaranteed shaft diameter precision (Details P.1301)

Head Thickness (T)	L	X1 max.
T4	50.00～300.00	30
JIS		35
T4 JIS	300.01～350.00	210

M SKD61 equivalent+Nitrided
H Surface base:900HV～
Base material:40～45HRC

Range of guaranteed base material hardness (Details P.1303)

Range of guaranteed surface hardness for nitriding (Details P.1303)

4mm head		JIS head		Part Number			0.01mm increments
H	T	H	T	Type 4mm head	Type JIS Head	Tip shapes	P	L
3	4	—	—	EPN	—	1A 11A 21A 31A 2A 12A 22A 32A 3A 13A 23A	1.5	50.00～200.00
4							2	50.00～250.00
5							2.5	
6							3	50.00～300.00
7		8	6		EPJ	4A 14A 24A 5A 15A 25A 6A 16A 26A 7A 17A 27A 8A 18A 28A 9A 19A 29A	3.5	
8		9					4	
9		10					4.5	
10		11					5	50.00～350.00
11		13	8				5.5	
15		15				10A 20A 30A	6	
17		17					6.5	
							7	
							8	
							10	
							12	

The shaped tip has the same hardness as its base material.
Select the tip shape 1A～32A P.93～96.
For JIS head type less than P4 is T=4, please place the order for 4mm head type of EPN□A

Order

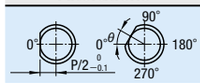
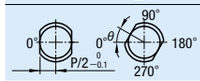
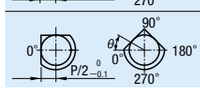
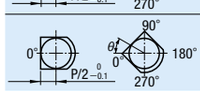
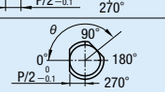
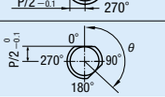
Part Number			—	L	—	Sequence of A/V/E/J/W/R/SR/F/G/K/Q
Type	Tip shapes	P				
EPJ	2A	10	—	200.00	—	V5.0 — G70

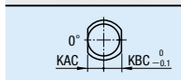
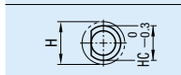
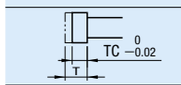
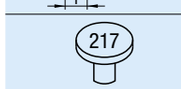
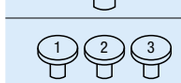
Days to Ship: Quotation

Alterations

Part Number		L	—	A・V・E・J・W・R・SR・F・G・K・Q	—	(AKC・AWC…etc.)
EPJ2A	10	200.00	—	V5.0 —G70	—	TC6

Alteration details P.53

Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0<AKC<360 No need to designate AKC0	
	AWC	AWC=1° increments 0≦AWC<360	
	ARC	ARC=1° increments 0≦ARC<360	Quotation
	ADC	ADC=1° increments 0≦ADC<360	
	KGA	KGA=1° increments 0<KGA<360	
	KGB	KGB=1° increments 0<KGB<360	

Alterations	Code	Spec.	1Code
	KAC KBC	Varied width parallel flats cutting P/2≦KAC<H/2 KBC=0.1mm increments only KAC<KBC<H/2 Combination with other key flat cutting not available	
	HC	HC=0.1mm increments P+1≦HC<H	
	TC	TC=0.1mm increments T/2≦TC<T (Dimensions L and F remain unchanged) T−TC≦Lmax.−L	Quotation
	NHC	Numbering on the head How to order P.54	
	NHN	Automatic sequential numbering on the head How to order P.54	
	NKC	Without key flat cutting Available for tip shapes 6A・9A・11A・12A・13A・30A Combination only with HC・TC・NHC・NHN available.	

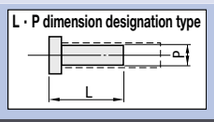
Price: Quotation

Dies Steel
SKD61 equivalent
4mm head

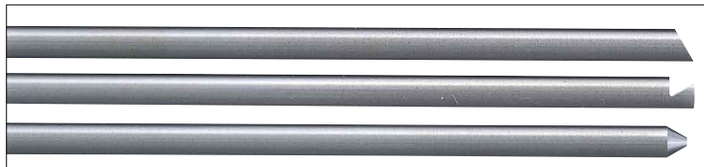
STRAIGHT EJECTOR PINS WITH TIP PROCESS

—L・P DIMENSION DESIGNATION TYPE—

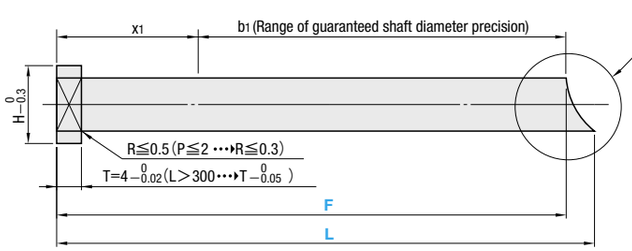
L・P dimension designation type



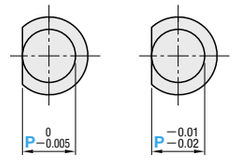
Non JIS material definition is listed on P.1351 - 1352



RoHS



Select a tip shape P.93～96



EPDBS□A　EPDB□A

To determine the shape position, key flat cutting is made at the standard 0°

Part Number	Head thickness	T P
EPDBS□A	4mm(T4)	0 −0.005
EPDB□A		−0.01 −0.02

Range of guaranteed shaft diameter precision
(Details P.1301)

L	x1 max.
50.00～150.00	30
150.01～200.00	60
200.01～250.00	110
250.01～300.00	160
300.01～350.00	210

M SKD61 equivalent
H 50～55HRC

Range of guaranteed base material hardness
(Details P.1303)

H	T	Part Number Type	Tip shapes	No.	0.01mm increments L	P
4	4	EPDBS (P 0 −0.005) / EPDB (P −0.01 −0.02)	1A 11A 21A 31A / 2A 12A 22A 32A / 3A 13A 23A / 4A 14A 24A / 5A 15A 25A / 6A 16A 26A / 7A 17A 27A / 8A 18A 28A / 9A 19A 29A / 10A 20A 30A	2	50.00～250.00	1.50～ 1.99
5				2.5		2.00～ 2.49
6				3	50.00～300.00	2.50～ 2.99
7				3.5		3.00～ 3.49
				4		3.50～ 3.99
8				4.5		4.00～ 4.49
				5	50.00～350.00	4.50～ 4.99
9				5.5		5.00～ 5.49
				6		5.50～ 5.99
10				6.5		6.00～ 6.49
				7		6.50～ 6.99
11				8		7.00～ 7.99
15				10		8.00～ 9.99
17				12		10.00～11.99

Select the tip shape 1A～32A P.93～96.

Order

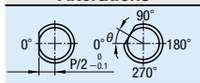
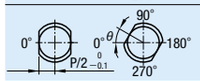
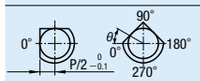
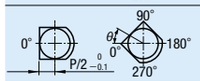
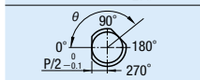
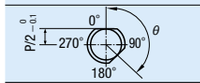
Part Number Type	Tip shapes	No.	— L	— P	— Sequence of A/V/E/J/W/R/SR/F/G/K/Q
EPDB	2A	10	— 200.00	— P9.80	— V5.0 —G70

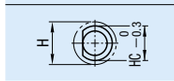
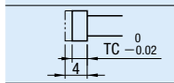
Days to Ship　Quotation

Alterations

Part Number — L — P — A・V・E・J・W・R・SR・F・G・K・Q — (AKC・AWC···etc.)
EPDB2A 10 — 200.00 — P9.80 — V5.0 —G70 — TC2

Alteration details P.53

Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0<AKC<360 No need to designate AKC0	Quotation
	AWC	AWC=1° increments 0≦AWC<360	
	ARC	ARC=1° increments 0≦ARC<360	
	ADC	ADC=1° increments 0≦ADC<360	
	KGA	KGA=1° increments 0<KGA<360	
	KGB	KGB=1° increments 0<KGB<360	

Alterations	Code	Spec.	1Code
	KAC KBC	Varied width parallel flats cutting P/2≦KAC<H/2 KBC=0.1mm increments only KAC<KBC<H/2 Combination with other key flat cutting not available	
	HC	HC=0.1mm increments P+1≦HC<H	
	TC	TC=0.1mm increments 2.0≦TC<4 (Dimensions L and F remain unchanged) 4—TC≦Lmax.—L	Quotation
	NHC	Numbering on the head How to order P.54	
	NHN	Automatic sequential numbering on the head How to order P.54	
	NKC	Without key flat cutting Available for tip shapes 6A・9A・11A・12A・13A・24A・25A・30A Combination only with HC・TC・NHC・NHN available.	

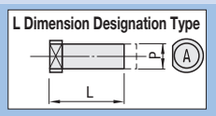
Price　Quotation

High Speed Steel
SKH51 equivalent

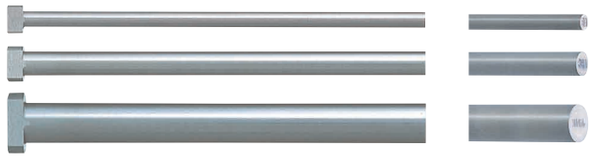
STRAIGHT EJECTOR PINS WITH ENGRAVING

—L DIMENSION DESIGNATION TYPE—

L Dimension Designation Type

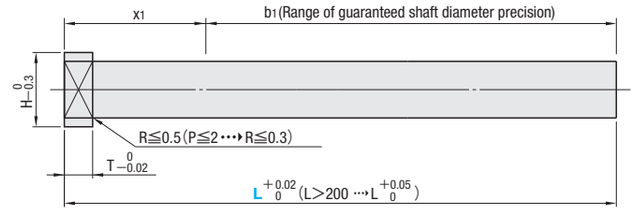


Non JIS material definition is listed on P.1351 - 1352

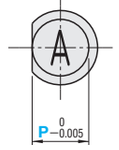


RoHS

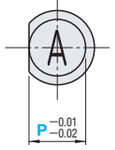
Part Number		Head thickness	T P
Type	Character		
EPH	□M	4mm(T4)	0 −0.005
EPHJ	□MR	6・8mm(JIS)	
EPHE	(Sequential numbering designation)	4mm(T4)	−0.01 −0.02
EPHJE		6・8mm(JIS)	



EPH□M・EPH□MR
EPHJ□M・EPHJ□MR



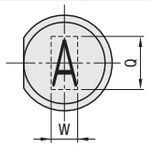
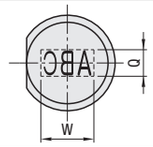
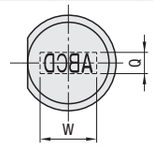
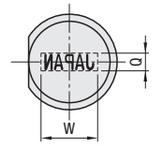
EPHE□M・EPHE□MR
EPHJE□M・EPHJE□MR



To determine the engraving position, key flat cutting is made at the standard 0°

Range of guaranteed shaft diameter precision (Details P.1301)
T4 ··· x1 max.30
JIS ··· x1 max.35

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness (Details P.1303)

1M・1MR (1 character)	2M・2MR (2 characters)	3M (3 characters)	4M (4 characters)	5M (5 characters)
				
0.3≦P≦12	1.5≦P≦12	2.8≦P≦12	3.6≦P≦12	4.5≦P≦12

Designate characters in the right reading order to appear on the finished products. Refer to P.118 for character font.

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	Part Number Character	Part Number P	0.01mm increments L
3	4	—	—	EPH (P 0 −0.005)	—	1M	0.3	40.00～ 60.00
							0.4 0.5	40.00～100.00
							0.6 0.7 0.8 0.9	40.00～150.00
							1 1.1 1.2 1.3 1.4	40.00～200.00
							1.5	40.00～250.00
4							1.6	40.00～250.00
5						2M	1.7 1.8 1.9	40.00～200.00
							2	40.00～250.00
							2.1	40.00～250.00
6						3M	2.2 2.3 2.4	40.00～200.00
							2.5	40.00～250.00
							2.6	40.00～250.00
7						4M	2.7 2.8 2.9	40.00～200.00
							3	40.00～250.00
							3.1	40.00～250.00
						5M	3.2 3.3 3.4	40.00～200.00
							3.5 3.6	40.00～250.00
				EPHE (P −0.01 −0.02)		Sequential numbering designation	3.7 3.8 3.9	40.00～200.00
8		8	6		EPHJ (P 0 −0.005)	1MR	4	40.00～250.00
							4.5	
9		9				2MR	5	
		10					5.5	
10		11			EPHJE (P −0.01 −0.02)		6	
							6.5	
11		13	8				7	
14		14					8	
15		15					9	
17		17					10	
							12	

Characters for engraving (Round Gothic type)

0 1 2 3 4
5 6 7 8 9

A B C D E
F G H I J
K L M N O
P Q R S T
U V W X Y
Z

Name	Characters for engraving	Order code
Slash	／	¥
Greater	＞	＞
Less	＜	＜
Plus	＋	＋
Minus	－	#
Space	⬚	%
Centered dot	・	@
Period	.	&

Use ¥ for indicating ／(slash), # for －(minus), % for ⬚(space), @ for ・(centered dot), and & for . (period).
1MR and 2MR are sequential numbering designation. In the case of bulk order of two or more ejector pins with the same size, the sequential numbering engraving is performed.
In case of 1MR,"0" is next to "9" while "A" is next to "Z".
In case of 2MR, the 1st digit is sequential, and if next to "9" or "Z", it starts from "0" or "A" while the 2nd digit is increased by one.
In case of 1MR and 2MR, other engraving characters cannot be used for designation.

1MR (Example)
- When placing the order for 5 pieces of EPH1MR2—150—1, characters for engraving "1 2 3 4 5"
- When placing the order for 3 pieces of EPH1MR3—150—Z, characters for engraving "Z A B"

2MR (Example)
- When placing the order for 4 pieces of EPH2MR4—100—01, characters for engraving "01 02 03 04"
- When placing the order for 4 pieces of EPH2MR4—100—A8, characters for engraving "A8 A9 B0 B1"
- When placing the order for 6 pieces of EPH2MR6—150—1X, characters for engraving "1X 1Y 1Z 2A 2B 2C"

■No. of characters and shaft diameter (P)

No. of characters	P
1M・1MR (1 character)	0.3～12
2M・2MR (2 characters)	1.5～12
3M (3 characters)	2.8～12
4M (4 characters)	3.6～12
5M (5 characters)	4.5～12

Order

Part Number			— L —	Characters for engraving (0～9, A～Z ／ ＞ ＜ ＋ － ⬚ ・ .)
Type	Character	P		
EPH	5M	6	— 200.00 —	ABC20
EPH	3M	5	— 184.25 —	@ ¥ ＋

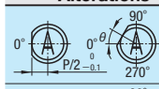
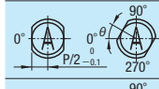
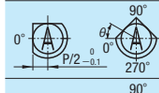
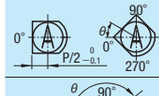
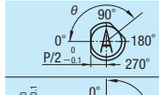
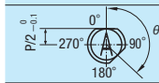
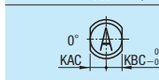
Days to Ship: Quotation

Alterations

Part Number	— L —	Characters for engraving	— (AKC・AWC···etc.)
EPH5M 6	— 200.00 —	ABC20	— AKC120

Quotation

Alteration details P.53

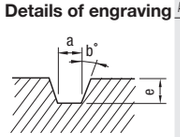
Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0＜AKC＜360 When combined with GCB/GCD, 90° increments only No need to designate AKC0	Quotation
	AWC	AWC=1° increments 0≦AWC＜360 When combined with GCB/GCD, 90° increments only	
	ARC	ARC=1° increments 0≦ARC＜360 When combined with GCB/GCD, 90° increments only	
	ADC	ADC=1° increments 0≦ADC＜360 When combined with GCB/GCD, 90° increments only	
	KGA	KGA=1° increments 0＜KGA＜360	
	KGB	KGB=1° increments 0＜KGB＜360	
	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2 Combination with other key flat cutting not available	

■Relationship between Shaft Diameter (P) and Character Size (Q, W)

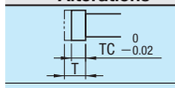
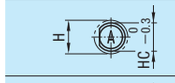
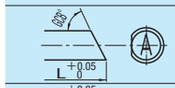
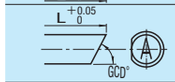
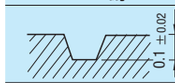
No. of characters	P	Q	W
1M 1MR (1 character)	0.3	0.2	0.1
	0.4	0.25	0.13
	0.5	0.35	0.18
	0.6～ 0.7	0.4	0.2
	0.8～ 0.9	0.6	0.3
	1 ～ 1.2	0.8	0.4
	1.3～ 1.4	1.0	0.5
	1.5～ 1.9	1.2	0.6
	2 ～ 2.4	1.5	0.8
	2.5～ 3.4	2.0	1.0
	3.5～ 4	3.0	1.5
	4.5～ 5	4.0	2.0
	5.5～12	5.0	2.5
2M 2MR (2 characters)	1.5～ 1.9	0.7	1.1
	2 ～ 2.2	0.8	1.2
	2.3～ 2.9	1.0	1.3
	3 ～ 3.9	1.5	2.0
	4 ～ 4.5	2.0	2.6
	5 ～ 5.5	2.5	3.3
	6 ～ 7	3.0	3.9
	8 ～12	4.0	5.2
3M (3 characters)	2.8～ 3	0.8	1.8
	3.1～ 4	1.0	2.1
	4.5～ 5	1.5	3.2
	5.5～ 6.5	2.0	4.2
	7 ～12	2.5	5.3
4M (4 characters)	3.6～ 3.8	0.8	2.4
	3.9～ 5	1.0	2.9
	5.5～ 6.5	1.5	4.4
	7 ～12	2.0	5.8
5M (5 characters)	4.5～ 4.9	0.8	3.0
	5 ～ 6.5	1.0	3.7
	7 ～12	1.5	5.6

Ejector pins	Finished products
Reversed reading (Concave character)	Right reading (Convex character)

Details of engraving



Width of engraving (a)	0.1×Q～0.2×Q	
Angle of engraving (b°)	35° ±2°	
Depth of engraving (e)	When P≦0.9	0.03±0.01
	When P≧1	0.05±0.02
	When EC code is used	0.1±0.02

Alterations	Code	Spec.	1Code
	TC	TC=0.1mm increments T/2≦TC＜T, P≧1.5 (Dimension L remains unchanged.) T−TC≦Lmax.−L	
	HC	HC=0.1mm increments P＋1≦HC＜H, P≧1.5	
	HCC	HCC=0.1mm increments P＋1≦HCC＜H−0.3, P≧1.5	
	NHC	Numbering on the head How to order P.54	Quotation
	NHN	Automatic sequential numbering on the head How to order P.54	
	GCB	GCB=1° increments 60≦GCB＜90 L≦200, Available when P≧2 Combination with GCD not available.	
	GCD	GCD=1° increments 60≦GCD＜90 L≦200, Available when P≧2 Combination with GCB not available.	
	EC	Engraving depth alteration 0.05 ··· 0.1 Available when P≧1 Combination with GCB, GCD not available.	

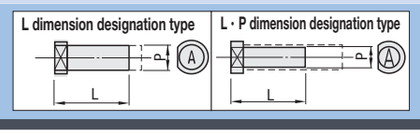
P Price: Quotation

High Speed Steel
SKH51 equivalent

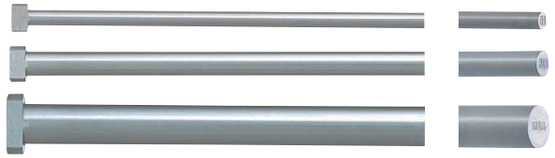
EXTRA PRECISION STRAIGHT EJECTOR PINS WITH ENGRAVING

—L DIMENSION DESIGNATION TYPE／L・P DIMENSION DESIGNATION TYPE—

L dimension designation type | L・P dimension designation type

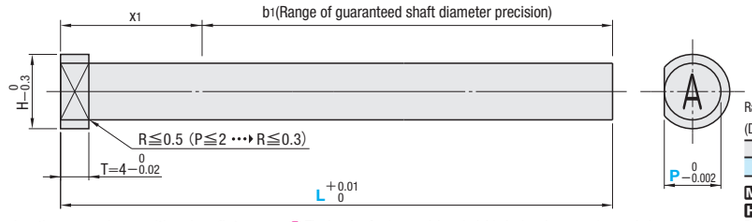


Non JIS material definition is listed on P.1351 - 1352



RoHS

Part Number		Head thickness	T P
Type	Character		
EPV EPVB	☐M ☐MR (Sequential numbering designation)	4mm(T4)	0 −0.002



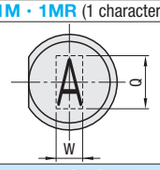
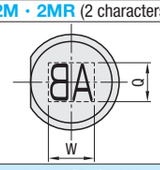
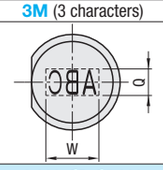
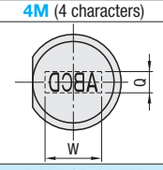
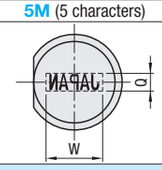
Range of guaranteed shaft diameter precision
(Details P.1301)

P	X1 max.
1.000～5.000	30

M SKH51 equivalent
H 58～60HRC
Range of guaranteed base material hardness
(Details P.1303)
Applied with overall quenching
(its head without annealing).

To determine the engraving position, key flat cutting is made at the standard 0°

The heads of extra precision straight ejector pins are not annealed in order to guarantee precision. Use a construction that supports sliding and does not readily apply a load to the flange of the ejector pin, such as by using a precision ejector guide pin & bushing.

1M・1MR (1 character)	2M・2MR (2 characters)	3M (3 characters)	4M (4 characters)	5M (5 characters)
				
1.000≦P≦5.000	2.000≦P≦5.000	2.800≦P≦5.000	3.600≦P≦5.000	4.500≦P≦5.000

Designate characters in the right reading order to appear on the finished products. Refer to P.118 for character font.

■ L dimension designation type

4mm head		Part Number			L	Characters for engraving (Round Gothic type)
H	T	Type	Character	P	0.01mm increments	0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
3	4	EPV	1M	1	50.00～100.00	
			2M	1.5		
4			3M	2		
5			4M	2.5		
6			5M	3		
7				3.5	50.00～120.00	
			Sequential numbering designation	4		
8				4.5		
			※1MR	5		
			※2MR			

Name	Characters for engraving	Order code
Slash	／	¥
Greater	＞	＞
Less	＜	＜
Plus	＋	＋
Minus	−	#
Space	☐	%
Centered dot	・	@
Period	.	&

Use ¥ for indicating (slash), # for −(minus), % for ☐(space), @ for ・(centered dot), and & for . (period).

■ L・P dimension designation type

4mm head		Part Number			L	P	Characters for engraving (Round Gothic type)
H	T	Type	Character	No.	0.01mm increments	0.001mm increments	0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
3	4	EPVB	1M	1.5	50.00～100.00	1.000～1.499	
4			2M	2		1.500～1.999	
5			3M	2.5		2.000～2.499	
6			4M	3		2.500～2.999	
7			5M	3.5	50.00～120.00	3.000～3.499	
			Sequential numbering designation	4		3.500～3.999	
8				4.5		4.000～4.499	
			※1MR	5		4.500～4.999	
			※2MR				

Name	Characters for engraving	Order code
Slash	／	¥
Greater	＞	＞
Less	＜	＜
Plus	＋	＋
Minus	−	#
Space	☐	%
Centered dot	・	@
Period	.	&

Use ¥ for indicating (slash), # for −(minus), % for ☐(space), @ for ・(centered dot), and & for . (period).
※ 1MR and 2MR are sequential numbering designation. In the case of bulk order of two or more ejector pins with the same size, the sequential numbering engraving is performed.
※ In case of 1MR,"0" is next to "9" while "A" is next to "Z". ⊗ In case of 1MR and 2MR, other engraving characters cannot be used for designation.
※ In case of 2MR, the ones digit is sequential, and if next to "9" or "Z", it starts from "0" or "A" while the tens digit is increased by one.
・When placing the order for 5 pieces of EPV1MR2—150—1, characters for engraving "1 2 3 4 5" ・When placing the order for 3 pieces of EPVB1MR3—150—P2.8—Z, characters for engraving "Z A B"

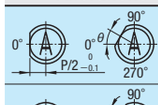
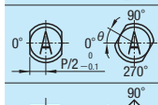
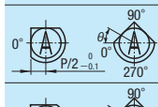
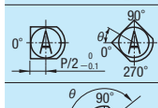
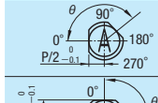
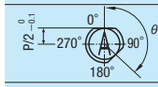
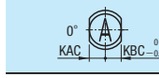
Order (L dimension designation type) (L・P dimension designation type)

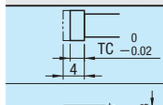
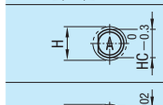
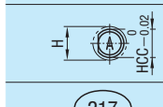
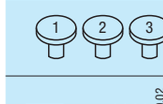
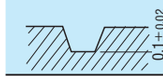
Part Number			L	P	Characters for engraving (0～9, A～Z ／ ＞ ＜ ＋ − ☐ ・)
Type	Character	No.			
EPV	1M	1.5	75.00		A
EPVB	3M	5	100.00	P4.700	BCD

Days to Ship: Quotation

Alterations: Part Number EPVB3M5 — L 100 — P P4.700 — Characters for engraving BCD — (AKC・AWC⋯etc.) TC3.0

Alteration details P.53

Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0＜AKC＜360 When combined with GCB/GCD, 90° increments only No need to designate AKC0	Quotation
	AWC	AWC=1° increments 0≦AWC＜360 When combined with GCB/GCD, 90° increments only	
	ARC	ARC=1° increments 0≦ARC＜360 When combined with GCB/GCD, 90° increments only	
	ADC	ADC=1° increments 0≦ADC＜360 When combined with GCB/GCD, 90° increments only	
	KGA	KGA=1° increments 0＜KGA＜360	
	KGB	KGB=1° increments 0＜KGB＜360	
	KAC KBC	Varied width parallel flats cutting P/2≦KAC＜H/2 KBC=0.1mm increments only KAC＜KBC＜H/2 ⊗ Combination with other key flat cutting not available	

Alterations	Code	Spec.	1Code
	TC	TC=0.1mm increments 2.0≦TC＜4, P≧1.5 (Dimension L remains unchanged.) 4−TC≦Lmax.−L	
	HC	HC=0.1mm increments P+1≦HC＜H, P≧1.5	
	HCC	HCC=0.1mm increments P+1≦HCC＜H−0.3, P≧1.5	Quotation
	NHC	Numbering on the head How to order P.54	
	NHN	Automatic sequential numbering on the head How to order P.54	
	EC	Engraving depth alteration 0.05 ⋯ 0.1 Available when P≧1 ⊗ Combination with GCB, GCD not available.	

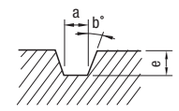
■ Relationship between Shaft Diameter (P) and Character Size (Q, W)

No. of characters	P	Q	W
1M 1MR (1 character)	1.000～1.299	0.8	0.4
	1.300～1.499	1.0	0.5
	1.500～1.999	1.2	0.6
	2.000～2.499	1.5	0.8
	2.500～3.499	2.0	1.0
	3.500～4.499	3.0	1.5
	4.500～5.000	4.0	2.0
2M 2MR (2 characters)	2.000～2.299	0.8	1.2
	2.300～2.999	1.0	1.3
	3.000～3.999	1.5	2.0
	4.000～4.999	2.0	2.6
	5.000	2.5	3.3

No. of characters	P	Q	W
3M (3 characters)	2.800～3.099	0.8	1.8
	3.100～4.499	1.0	2.1
	4.500～5.000	1.5	3.2
4M (4 characters)	3.600～3.899	0.8	2.4
	3.900～5.000	1.0	2.9
5M (5 characters)	4.500～4.999	0.8	3.0
	5.000	1.0	3.7

Ejector pins	Finished products
Reversed reading (Concave character)	Right reading (Convex character)

Details of engraving



Width of engraving (a)	(0.1×Q)±0.05
Angle of engraving (b°)	30° ± 2°
Depth of engraving (e)	0.05±0.02 When EC code is used 0.1±0.02

Price: Quotation

Straight Ejector Pins

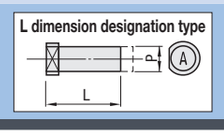
High Speed Steel SKH51 equivalent

Dies Steel
SKD61 equivalent
+
Nitriding

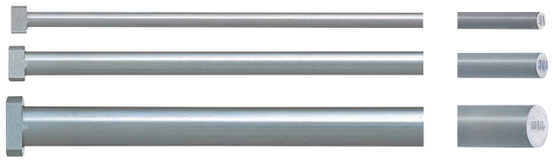
STRAIGHT EJECTOR PINS WITH ENGRAVING

—L DIMENSION TYPE—

L dimension designation type

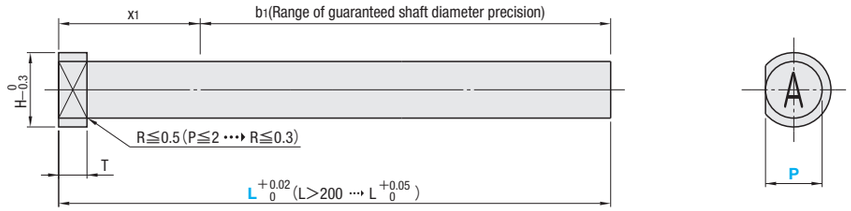


Non JIS material definition is listed on P.1351 - 1352



RoHS

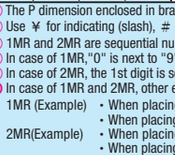
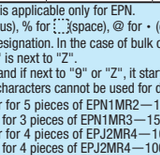
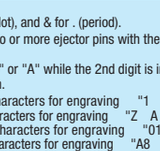
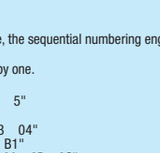
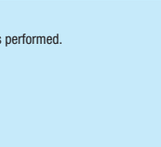
Part Number	Head thickness	T T	T P 1～13	T P 15～20	T P 25
EPN□M EPN□MR	4mm(T4)	0 −0.02	−0.01 −0.02	−0.01 −0.03	−0.01 −0.04
EPJ□M EPJ□MR	6・8mm(JIS)	0 −0.05			



To determine the engraving position, key flat cutting is made at the standard 0°

Range of guaranteed shaft diameter precision (Details P.1301)
T4 ⋯ x1 max.30
JIS ⋯ x1 max.35

M SKD61 equivalent+Nitrided
H Surface:900HV～ Base material:40～45HRC
Range of guaranteed base material hardness (Details P.1303)
Range of guaranteed surface hardness for nitriding (Details P.1303)

1M・1MR (1 character)	2M・2MR (2 characters)	3M (3 characters)	4M (4 characters)	5M (5 characters)
				
1≦P≦25	1.5≦P≦25	2.8≦P≦25	3.6≦P≦25	4.5≦P≦25

Designate characters in the right reading order to appear on the finished products. Refer to P.118 for character font.

4mm head H	4mm head T	JIS head H	JIS head T	Part Number Type 4mm head	Part Number Type JIS head	Part Number Character	Part Number P	0.01mm increments L
3	4	—	—	EPN	—	1M	1 1.1 1.2 1.3 1.4	40.00～150.00
							1.5	
4							1.6 1.7 1.8 1.9	40.00～200.00
5							2	
6							2.1 2.2 2.3 2.4	
7						2M	2.5	
							2.6 2.7 2.8 2.9	
8		8	6		EPJ		3	
						3M	3.1 3.2 3.3 3.4	
		9					3.5	
9							3.6 3.7 3.8 3.9	
		10				4M	4	
10		11					(4.1) (4.2) (4.3) (4.4)	
							4.5	
11		13	8				(4.6) (4.7) (4.8) (4.9)	
15		15					5	
17		17				5M	(5.1) (5.2) (5.3) (5.4)	40.00～300.00
18		18					5.5	
20		20					(5.6) (5.7) (5.8) (5.9)	
21		21				Sequential numbering designation	6	
—	—	25		—			(6.1) (6.2) (6.3) (6.4)	
		30					6.5	
						1MR	7	
							8	
						2MR	10	
							12	
							(13)	
							15	
							16	
							20	
							25	

Characters for engraving (Round Gothic type)

0 1 2 3 4
5 6 7 8 9

A B C D E
F G H I J
K L M N O
P Q R S T
U V W X Y
Z

Name	Characters for engraving	Order code
Slash	/	¥
Greater	>	>
Less	<	<
Plus	+	+
Minus	−	#
Space	⬚	%
Centered dot	・	@
Period	.	&

The P dimension enclosed in brackets ( ) is applicable only for EPN.
Use ¥ for indicating (slash), # for −(minus), % for ⬚(space), @ for ・(centered dot), and & for .(period).
1MR and 2MR are sequential numbering designation. In the case of bulk order of two or more ejector pins with the same size, the sequential numbering engraving is performed.
In case of 1MR,"0" is next to "9" while "A" is next to "Z".
In case of 2MR, the 1st digit is sequential, and if next to "9" or "Z", it starts from "0" or "A" while the 2nd digit is increased by one.
In case of 1MR and 2MR, other engraving characters cannot be used for designation.

1MR (Example) ・When placing the order for 5 pieces of EPN1MR2—150—1, characters for engraving "1 2 3 4 5"
・When placing the order for 3 pieces of EPN1MR3—150—Z, characters for engraving "Z A B"
2MR(Example) ・When placing the order for 4 pieces of EPJ2MR4—100—01, characters for engraving "01 02 03 04"
・When placing the order for 4 pieces of EPJ2MR4—100—A8, characters for engraving "A8 A9 B0 B1"
・When placing the order for 6 pieces of EPJ2MR6—150—1X, characters for engraving "1X 1Y 1Z 2A 2B 2C"

Order

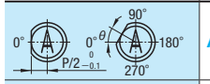
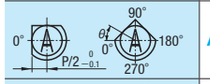
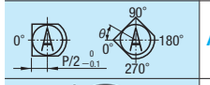
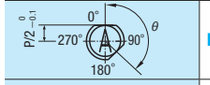
Part Number Type	Character	P	L	Characters for engraving 0～9, A～Z (/><+−⬚•.)
EPN	2M	6	250.00	A1
EPJ	1MR	5	280.00	T

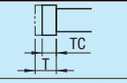
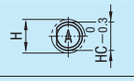
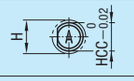
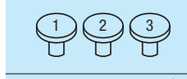
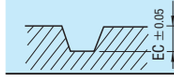
Days to Ship: Quotation

Alterations

Part Number	L	Characters for engraving	(AKC・AWC⋯etc.)
EPJ1M 4	270.00	A	AKC90

Alteration details P.53

Alterations	Code	Spec.	1Code
	AKC	AKC=1° increments 0<AKC<360 No need to designate AKC0	Quotation
	AWC	AWC=1° increments 0≦AWC<360	
	ARC	ARC=1° increments 0≦ARC<360	
	ADC	ADC=1° increments 0≦ADC<360	
	KGA	KGA=1° increments 0<KGA<360	
	KGB	KGB=1° increments 0<KGB<360	
	KAC KBC	Varied width parallel flats cutting P/2≦KAC<H/2 KBC=0.1mm increments only KAC<KBC<H/2 Combination with other key flat cutting not available	

Alterations	Code	Spec.	1Code
	TC	TC=0.1mm increments T/2≦TC<T, P≧1.5 (Dimension L remains unchanged.) T−TC≦Lmax.−L	
	HC	HC=0.1mm increments P+1≦HC<H, P≧1.5	
	HCC	HCC=0.1mm increments P+1≦HCC<H−0.3, P≧1.5	Quotation
	NHC	Numbering on the head How to order P.54	
	NHN	Automatic sequential numbering on the head How to order P.54	
	EC	Engraving depth alteration 0.2 ⋯▸ 0.1 Designation method EC0.1 0.2 ⋯▸ 0.3 Designation method EC0.3	

Price: Quotation

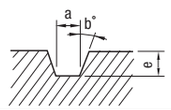
■Relationship between Shaft Diameter (P) and Character Size (Q, W)

No. of characters	P	Q	W
1M 1MR (1 character)	1～1.2	0.8	0.4
	1.3～1.4	1.0	0.5
	1.5～1.9	1.2	0.6
	2～2.4	1.5	0.8
	2.5～3.4	2.0	1.0
	3.5～4.4	3.0	1.5
	4.5～5.4	4.0	2.0
	5.5～12	5.0	2.5
	13～20	9.0	4.5
	25	14.0	7.0
2M 2MR (2 characters)	1.5～1.9	0.7	1.1
	2～2.2	0.8	1.2
	2.3～2.9	1.0	1.3
	3～3.9	1.5	2.0
	4～4.9	2.0	2.6
	5～5.9	2.5	3.3
	6～7	3.0	3.9
	8～12	4.0	5.2
	13～20	6.5	8.0
	25	10.0	12.5

No. of characters	P	Q	W
3M (3 characters)	2.8～3	0.8	1.8
	3.1～4.4	1.0	2.1
	4.5～5.4	1.5	3.2
	5.5～6.5	2.0	4.2
	7～12	2.5	5.3
	13～20	4.5	8.5
	25	7.0	13.5
4M (4 characters)	3.6～3.8	0.8	2.4
	3.9～5.4	1.0	2.9
	5.5～6.5	1.5	4.4
	7～12	2.0	5.8
	13～20	3.5	8.8
	25	5.5	14.0
5M (5 characters)	4.5～4.9	0.8	3.0
	5～6.5	1.0	3.7
	7～12	1.5	5.6
	13～20	3.0	9.0
	25	4.8	14.2

Ejector pins	Finished products
Reversed reading (Concave character)	Right reading (Concave character)

Details of engraving



Width of engraving (a)	0.1XQ～0.2XQ
Angle of engraving (b°)	20° ±2°
Depth of engraving (e)	0.2±0.05