

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

Ⓜ The inside diameter is finished by electric discharge. Ⓜ The angle (K°) and the secondary sprue (A°) are roundly connected.

**RoHS** **Shape 1A**

Enlarged view of the tip

\*This bushing has a flat area of 0~0.2 (PGHV) 0~0.05(PGHVZ) on its tip (P dimension).

Type	P
PGHV	±0.01
PGHVZ	±0.02

Ⓜ (L-C-B) ≥ 3.0

**RoHS** **Shape 2A**

Enlarged view of the tip

\*This bushing has a flat area of 0~0.2 (PGHV) 0~0.05(PGHVZ) on its tip (P dimension).

Type	P
PGHV	±0.01
PGHVZ	±0.02

Ⓜ (L-B) ≥ 3.0

**RoHS** **Shape 3A**

Enlarged view of the tip

\*This bushing has a flat area of 0~0.2 (PGHV) 0~0.05(PGHVZ) on its tip (P dimension).

Type	P
PGHV	±0.01
PGHVZ	±0.02

Ⓜ (L-C-B) ≥ 3.0

**RoHS** **Shape 4A**

Enlarged view of the tip

\*This bushing has a flat area of 0~0.2 on its tip (P dimension).

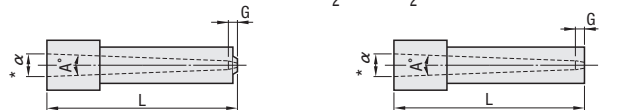
Ⓜ (L-C-B) ≥ 3.0 Ⓜ  $R \geq \sqrt{(P/2)^2 + C^2}$  Ⓜ  $V = 2 \times \sqrt{R^2 - (\sqrt{R^2 - (P/2)^2} - C)^2}$

**RoHS** **Shape 5A**

Enlarged view of the tip

\*This bushing has a flat area of 0~0.2 on its tip (P dimension).

• Calculation for the inlet diameter \*  $\alpha = 2\{(L-G)\tan\frac{A^\circ}{2} + G\tan\frac{K^\circ}{2}\} + P$



Ⓜ The dimension acquired using the above calculation is the theoretical (reference) value.

Part Number	M	G
PGHV□A PGHVZ□A	SKH51	59~61HRC

H	G	Part Number			L 0.01mm increments	P	A°	K°	B 0.01mm increments	None for 2A C 0.1mm increments	Shape 1A only V 0.1mm increments	Shape 3A only S° increments	Shape 4A only R 0.1mm increments
		Type	Shape	D									
4	1.0	PGHV (Normal type)	1A	2.5	8.00~25.00	0.3 0.4 0.5 0.6 <sup>(*)1</sup>	1	20	4.00~6.00	0.2~0.5	1.5~2.4		0.6~1.0
							2	30					
							3	30					
5	1.2	PGHVZ (Acute angle type)	2A	3	10.00~40.00	0.5 0.6 0.7 0.8 <sup>(*)2</sup>	1	20	5.00~9.00	0.3~0.8	2.0~2.9		0.8~1.5
							2	30	5.00~8.00				
							3	30	5.00~7.00				
6	1.5	PGHVZ (Acute angle type)	3A	4	15.00~60.00	0.6 0.7 0.8 0.9 1.0	1	20	5.00~30.00	0.5~1.5	2.5~3.9	1~45	1.0~2.0
							2	30	5.00~20.00				
							3	30	5.00~20.00				
8	2.0	PGHVZ (Acute angle type)	4A <sup>(*)5</sup>	5	15.00~60.00	0.8 0.9 1.0	1	20	5.00~35.00	0.5~1.5	3.5~4.9		1.0~2.0
							2	30	5.00~30.00				
							3	30	5.00~20.00				
9	1.5	PGHVZ (Acute angle type)	(4A) <sup>(*)5</sup>	6	15.00~60.00	1.1 1.2 1.3 1.4 <sup>(*)3</sup> 1.4 <sup>(*)3</sup>	1	20	5.00~30.00	0.5~1.5	4.0~5.9	1~50	1.5~3.0
							2	30	5.00~20.00				
							3	30	5.00~20.00				
11	2.0	PGHVZ (Acute angle type)	(5A) <sup>(*)5</sup>	8	15.00~60.00	1.2 1.3 1.4 1.5 1.6	1	20	5.00~50.00	0.5~1.5	4.5~7.9	1~60	2.0~4.0
							2	30	5.00~35.00				
							3	30	5.00~40.00				
13	2.0	PGHVZ (Acute angle type)	(5A) <sup>(*)5</sup>	10	15.00~60.00	1.2 1.3 1.4 1.5 1.6	1	20	5.00~30.00	0.5~1.5	5.0~9.9	1~60	2.5~5.0
							2	30	5.00~30.00				
							3	30	5.00~30.00				

Ⓜ For shape 4A,  $R \geq \sqrt{(P/2)^2 + C^2}$   
 (\*1) Only K20° can be selected for P0.6 (D2.5) (\*4) When P1.5 • P1.6 (D6) and K30° or more, G is 1.2.  
 (\*2) P0.8(D3) can be selected from K20° • K30° (\*5) Shape ( ) is only for PGHV.  
 (\*3) Only K60° cannot be selected for P1.2~P1.4 (D5)

**Order**

Part Number	L	P	A	K	B	C	V	S	R
PGHV1A4	-20.01	-P0.8	-A2	-K30	-B15.00	-C0.5	-V3.0		
PGHVZ2A4	-20.01	-P0.8	-A2	-K30	-B15.00				
PGHVZ3A4	-20.01	-P0.8	-A2	-K30	-B15.00	-C0.5	-S30		
PGHV4A4	-20.01	-P0.8	-A2	-K30	-B15.00	-C0.5	-R1.0		
PGHV5A4	-20.01	-P0.8	-A2	-K30	-B15.00	-C0.5			

**Characteristics**

<Enlarged photograph of tip> <Enlarged view of the tip>

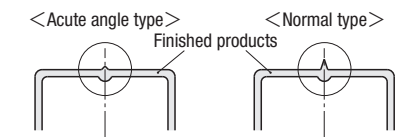
Acute angle type Acute angle type Normal type

**Normal type**

- It has a flat area of 0~0.2mm on its tip.
- P dimension tolerance is ±0.01.

**Acute angle type**

- It has a flat area of 0~0.05mm on its tip.
- P dimension tolerance is ±0.02.
- With the straight part shorter than the normal type, the gate residual can be suppressed but durability may be decreased.



**Price** **Quotation**

**Days to Ship** **Quotation**

**Alterations**

Part Number	L	P	A	K	B	C	V	S	R	(CC • CVC)
PGHV1A4	-20.01	-P0.8	-A2	-K20	-B15.00	-C0.5	-V3.0	-	-	-CVC0.3

Alterations	Code	Spec.	1Code
	PKC	Changes P dimension tolerance. P±0.02 → ±0.01 Ⓜ Only applicable for PGHVZ.	<b>Quotation</b>
	CC	C chamfering for inlay relief. D2.5 → C0.2 D3~4 → C0.3 D5~10 → C0.5	<b>Quotation</b>

Alterations	Code	Spec.	1Code
	CVC	C chamfering for inlay relief. CVC=0.1mm increments 0.2 ≤ CVC < $\frac{(H-D)}{2} - 0.1$	<b>Quotation</b>