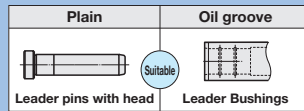


# PRECISION LEADER PINS

— HEAD · PLAIN PRESS-FIT LENGTH DESIGNATION TYPE · PRESS-FIT DIAMETER · LENGTH DESIGNATION TYPE —



☉ Non JIS material definition is listed on P.1359 - 1360

RoHS

**GPHL** (Press-fit diameter Dm5 · length designation type)  
**GPH-XL** (Press-fit diameter · length designation type)

• **GPHL8 · 10**  
**GPH-XL8 · 10**  
**Details of tip**

Sliding parts D	Press-fit section Dm5	GPHL	T	H	E
8	-0.015	8	+0.012	11	3
10	-0.020	10	+0.006	13	4
12		12		17	
13	-0.020	13	+0.015	18	
16		16	+0.007	21	
20		20		25	
25	-0.025	25	+0.017	30	5
28	-0.030	28	+0.008	33	
30		30		35	
32	-0.030	32		37	
35	-0.035	35	+0.020	40	
40	-0.030	40	+0.009	10	45
50	-0.040	50		12	55
60	-0.030	60	+0.024	15	65
	-0.050		+0.011		

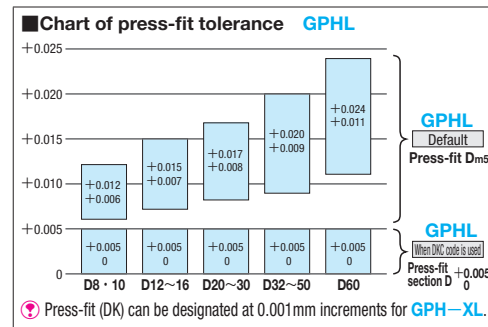
☉ Recommended mold temperature for the usage of a precision leader pin and bushing is 80°C or less because of a little clearance between them. (☉ P.882)  
 ☉ A center hole may be left on one or both ends.

☉ SUJ2 ☉ 58HRC~(Induction hardening)

**Order** Part Number — L — N — DK  
**GPHL 25 — 250 — N100**  
**GPH-XL25 — 250 — N100 — DK25.009**

**Days to Ship**  
 • **GPHL**  
**3** Days Express T Express A P.46  
 ☉ Delivery days depend on subsidiary. ☉ P.45  
 • **GPH-XL**  
**3** Days Express T Express A P.46  
 ☉ Delivery days depend on subsidiary. ☉ P.45

**Alterations** Part Number — L(LC) — N — DK — (OC · MC · GC · etc.)  
**GPH-XL 25 — LC249 — N100 — DK25.009 — GC — E20 — K10**  
 ☉ Combination of GC with OC not available.



Alterations	Code	Spec.	1Code															
	LC	Total length alteration LC=1mm increments Shortens the full length (L) as shown in the drawing. (Tip dimension E remains unchanged.) ☉ Lmin.<LC<Lmax.																
	OC	Adds oil grooves. ☉ Please note that the designation range of N dimension is changed. Alteration details ☉ P.884																
	MC	Tip tapping ☉ Not available for D=8 or 10 <table border="1"> <tr><th>D</th><th>M×Pitch</th><th>ℓ</th></tr> <tr><td>12 · 13</td><td>M 6×1.0</td><td>12</td></tr> <tr><td>16</td><td>M10×1.5</td><td>20</td></tr> <tr><td>20</td><td>M12×1.75</td><td>24</td></tr> <tr><td>25~60</td><td>M16×2.0</td><td>32</td></tr> </table>	D	M×Pitch	ℓ	12 · 13	M 6×1.0	12	16	M10×1.5	20	20	M12×1.75	24	25~60	M16×2.0	32	Quotation
D	M×Pitch	ℓ																
12 · 13	M 6×1.0	12																
16	M10×1.5	20																
20	M12×1.75	24																
25~60	M16×2.0	32																
	DKC	Press-fit section tolerance alteration Dm5 → D <sub>0</sub> <sup>+0.005</sup> ☉ Available for GPHL																
	GA	Adds a tap to attach a leader assist pin. ☉ Available for D40 · 50 · 60. Alteration details ☉ P.883																

**Alteration details ☉ P.883 · 884**

Alterations	Code	Spec.	1Code																
	MMC	Tapping on the head ☉ Not available for D=8 and 10. <table border="1"> <tr><th>D</th><th>M×Pitch</th><th>ℓ</th></tr> <tr><td>12~20</td><td>M5×0.8</td><td>10</td></tr> <tr><td>25~60</td><td>M8×1.25</td><td>16</td></tr> </table>	D	M×Pitch	ℓ	12~20	M5×0.8	10	25~60	M8×1.25	16								
D	M×Pitch	ℓ																	
12~20	M5×0.8	10																	
25~60	M8×1.25	16																	
	GC	Tapers the tip. ☉ Designation method GC—E20—K10 E=1mm increments K=1° increments 1° ≤K≤10° ☉ E>20 of D16~30 is available only when L≥50. <table border="1"> <tr><th>D</th><th>E</th></tr> <tr><td>8 · 10</td><td>5 ≤E ≤15</td></tr> <tr><td>12 · 13</td><td>5 ≤E ≤20</td></tr> <tr><td>16</td><td>5 ≤E ≤25</td></tr> <tr><td>20</td><td>5 ≤E ≤30</td></tr> <tr><td>25 · 28</td><td>5 ≤E ≤35</td></tr> <tr><td>30</td><td>5 ≤E ≤40</td></tr> <tr><td>32~60</td><td>5 ≤E ≤20</td></tr> </table>	D	E	8 · 10	5 ≤E ≤15	12 · 13	5 ≤E ≤20	16	5 ≤E ≤25	20	5 ≤E ≤30	25 · 28	5 ≤E ≤35	30	5 ≤E ≤40	32~60	5 ≤E ≤20	Quotation
D	E																		
8 · 10	5 ≤E ≤15																		
12 · 13	5 ≤E ≤20																		
16	5 ≤E ≤25																		
20	5 ≤E ≤30																		
25 · 28	5 ≤E ≤35																		
30	5 ≤E ≤40																		
32~60	5 ≤E ≤20																		
		☉ The tapered part is to be cut.																	
	AC	Groove processing for air relief ☉ Designation method AC124 AC=1mm increments 10 ≤AC ≤L-(N+5) 5 Days																	

**P** Price

Quantity	1~9	10~19	20~29	30~50
Rate	—	5%	10%	15%

☉ To be quoted on price & lead time above Max. Q'ty.

**GPHL (Press-fit diameter Dm5 · length designation type)**

Part Number Type	D	L		N	U/Price 1~9	Part Number Type	D	L		N	U/Price 1~9	Part Number Type	D	L		N	U/Price 1~9																																					
		5mm increments	1mm increments					5mm increments	1mm increments					5mm increments	1mm increments																																							
GPHL	8	30~40	10~60	13~120	Quotation	GPHL	25	40~60	13~130	Quotation	GPHL	35	60~100	13~130	Quotation	GPHL	40	60~100																																				
		45~50						105~160					165~200																																									
		55~80						165~200					205~260																																									
	10	30~40	10~80					13~130					Quotation					GPHL	28	40~60	13~130	Quotation	GPHL	50	80~140	15~200	Quotation	GPHL	60	80~140																								
		45~50																		145~190					195~240																													
		55~80																		145~190					245~300																													
	12	30~40	10~80																	13~130					Quotation					GPHL	30	50~60	13~130	Quotation	GPHL	55	100~150	17~200	Quotation	GPHL	60	100~150												
		45~80																														155~190					195~240																	
		55~80																														155~190					245~300																	
	13	30~40	13~80																													13~130					Quotation					GPHL	32	50~60	13~130	Quotation	GPHL	60	200~250	20~200	Quotation	GPHL	60	200~250
		45~80																																										255~300					305~350					
		55~80																																										255~300					305~350					
16	30~40	13~100	13~130	Quotation	GPHL	32	50~60		13~130	Quotation	GPHL	60		255~300	20~200	Quotation	GPHL																											60					255~300					
	45~80						305~350							355~400																																								
	55~80						305~350							355~400																																								
20	30~50	13~100					13~130	Quotation					GPHL	32				50~60	13~130		Quotation	GPHL	60	305~400		20~200	Quotation	GPHL	60																				305~400					
	45~80																	355~400						405~450																														
	55~80																	355~400						405~450																														

☉ Designate Nmin. value when no press-fit section is required. ex. D=13 → N=5 ☉ Please designate process-fit length with N ≤ L - E.  
 ☉ No press-fitting section when N=T+(2 or 3).

**GPH-XL (Press-fit diameter · length designation type)**

Part Number Type	D	L		N	Press-fit diameter DK 0.001mm increments	U/Price 1~9	Part Number Type	D	L		N	Press-fit diameter DK 0.001mm increments	U/Price 1~9																																
		5mm increments	1mm increments						5mm increments	1mm increments																																			
GPH-XL	8	30~50	10~60	13~130	8.000~8.050	Quotation	GPH-XL	32	50~60	13~130	32.000~32.050	Quotation	GPH-XL	40	50~60																														
		55~80							115~160						165~200																														
		55~80							115~160						165~200																														
	10	30~50	10~80						13~130						10.000~10.050	Quotation	GPH-XL	35	60~110	13~130	35.000~35.050	Quotation	GPH-XL	50	60~110																				
		55~80																	115~160						165~200																				
		55~80																	115~160						165~200																				
	12	30~50	10~80																13~130						12.000~12.050	Quotation	GPH-XL	40	80~150	15~200	40.000~40.050	Quotation	GPH-XL	60	80~150										
		55~80																											155~190						195~250										
		55~80																											155~190						195~250										
	13	30~50	13~80																										13~130						13.000~13.050	Quotation	GPH-XL	50	100~150	17~200	50.000~50.050	Quotation	GPH-XL	60	100~150
		55~80																																					155~190						195~250
		55~80																																					155~190						195~250
16	30~50	13~80	13~130	16.000~16.050	Quotation	GPH-XL	60	200~250		20~200	60.000~60.050	Quotation	GPH-XL	60																									200~250						
	55~80							255~300																															305~350						
	55~80							255~300																															305~350						
20	30~60	13~100						13~130	20.000~20.050						Quotation	GPH-XL	60	255~300		20~200	60.000~60.050	Quotation	GPH-XL	60															255~300						
	65~110																	305~360																					365~400						
	65~110																	305~360																					365~400						
25	40~60	13~120																13~130	25.000~25.050						Quotation	GPH-XL	60	305~360		20~200	60.000~60.050	Quotation	GPH-XL	60					305~360						
	65~110																											365~400											405~460						
	65~110																											365~400											405~460						
28	50~60	13~130																										13~130	28.000~28.050						Quotation	GPH-XL	60	405~460	20~200	60.000~60.050	Quotation	GPH-XL	60	405~460	
	65~110																																					465~500						505~550	
	65~110																																					465~500						505~550	
30	50~60	13~130	13~130	30.000~30.050	Quotation	GPH-XL	60			505~550	20~200	60.000~60.050	Quotation	GPH-XL																								60						505~550	
	65~110									505~550																																		505~550	
	65~110									505~550																																		505~550	

☉ DK tolerance of press-fit diameter of D32~60: DK±0.003  
 ☉ Designate press-fit length with N ≤ L - E.

☉ DK tolerance of press-fit diameter of D8~30: DK±0.002