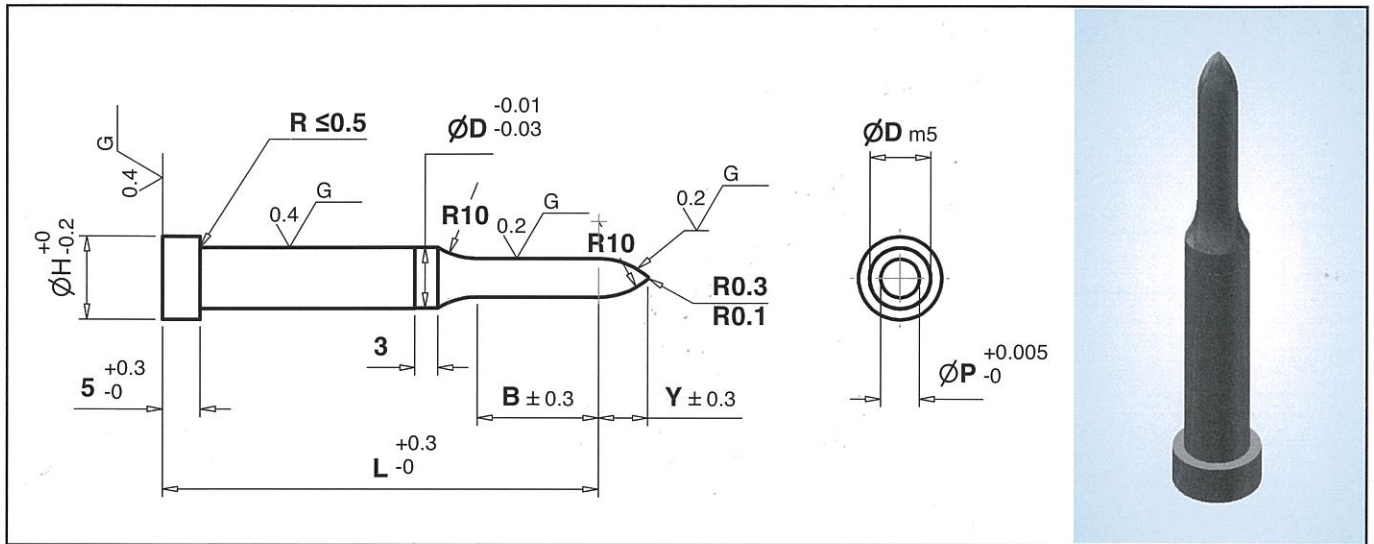


SOLID CARBIDE PILOT PUNCHES



- STANDARD, TIP R TYPE (CCAL)
- STANDARD, TIP R TYPE WITH TiCN COATING (TCAL)



D Body Dia.	P Point Dia.	B Point Length	H Head Dia.	L – Length				
				40	50	60	70	80
3.0	1.500 – 2.990	8 – 13	5.0	•	•	•		
4.0	1.500 – 3.990	8 – 13	7.0	•	•	•	•	
5.0	1.500 – 4.990	8 – 13	8.0	•	•	•	•	
6.0	2.000 – 5.990	8 – 13	9.0	•	•	•	•	
8.0	3.000 – 7.990	13 – 19	11.0	•	•	•	•	•
10.0	3.000 – 9.990	13 – 19	13.0	•	•	•	•	•
13.0	6.000 – 12.990	13 – 19	16.0	•	•	•	•	•
16.0	10.000 – 15.990	19 – 25	19.0	•	•	•	•	•
20.0	13.000 – 19.990	19 – 25	23.0	•	•	•	•	•
25.0	18.000 – 24.990	19 – 25	28.0	•	•	•	•	•

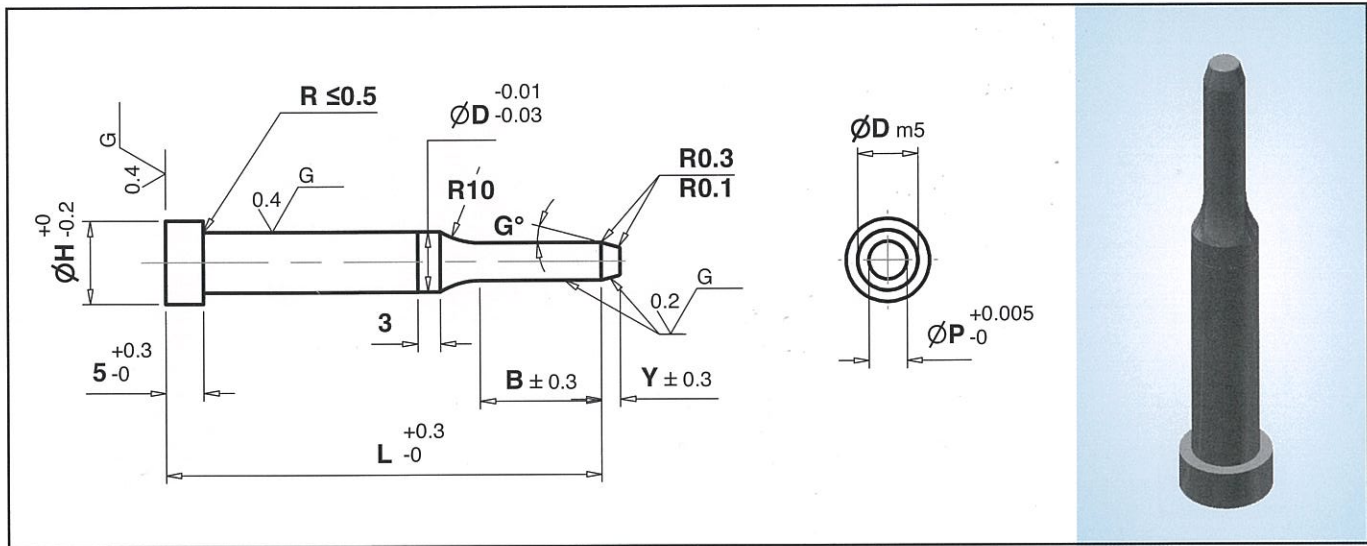
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCAL – D – P – B – L**
 Example : **TCAL – D3.0 – P1.500 – B8 – L40**

SOLID CARBIDE PILOT PUNCHES



- STANDARD, TIP TAPERED TYPE (CCAM)
- STANDARD, TIP TAPERED TYPE WITH TiCN COATING (TCAM)



D Body Dia.	P Point Dia.	B Point Length	H Head Dia.	Y Tip Length	L – Length				
					40	50	60	70	80
3.0	1.500 – 2.990	8 – 13	5.0	2	•	•	•		
4.0	1.500 – 3.990	8 – 13	7.0	2	•	•	•	•	
5.0	1.500 – 4.990	8 – 13	8.0	3	•	•	•	•	
6.0	2.000 – 5.990	8 – 13	9.0	3	•	•	•	•	
8.0	3.000 – 7.990	13 – 19	11.0	5	•	•	•	•	•
10.0	3.000 – 9.990	13 – 19	13.0	5	•	•	•	•	•
13.0	6.000 – 12.990	13 – 19	16.0	8	•	•	•	•	•
16.0	10.000 – 15.990	19 – 25	19.0	8	•	•	•	•	•
20.0	13.000 – 19.990	19 – 25	23.0	10	•	•	•	•	•
25.0	18.000 – 24.990	19 – 25	28.0	10	•	•	•	•	•

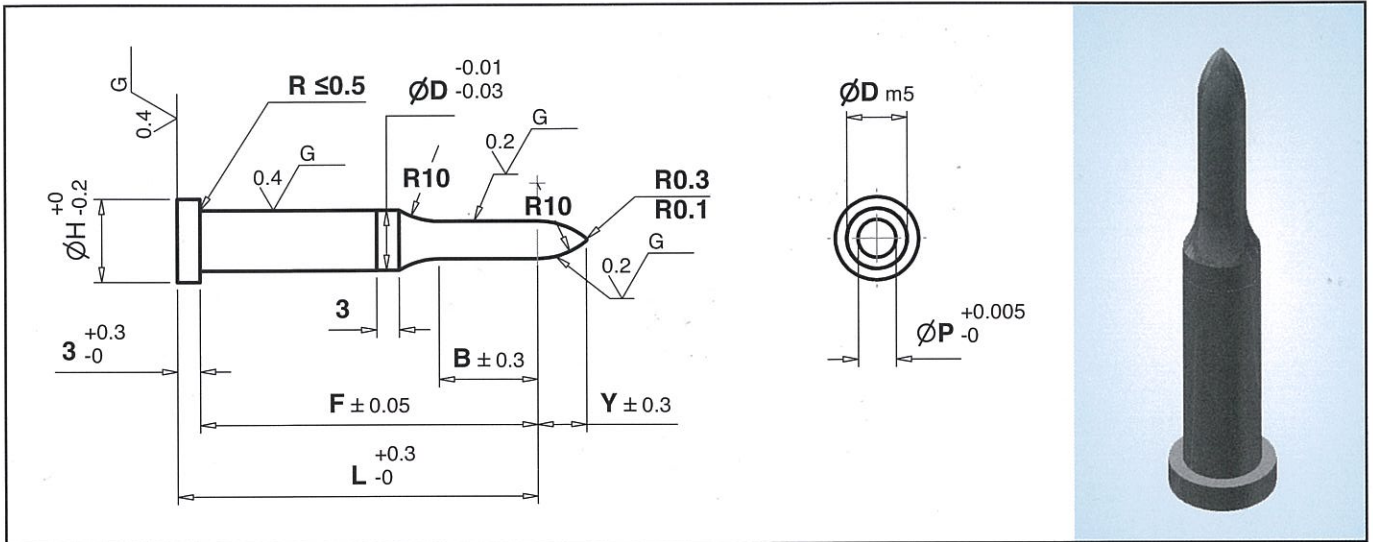
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : – **D – P – B – L**
 Example : **TCAM – D3.0 – P1.500 – B8 – L40**

SOLID CARBIDE PILOT PUNCHES



- FIXED IN STRIPPER PLATE, TIP R TYPE (CCBL)
- FIXED IN STRIPPER PLATE, TIP R TYPE WITH TiCN COATING (TCBL)



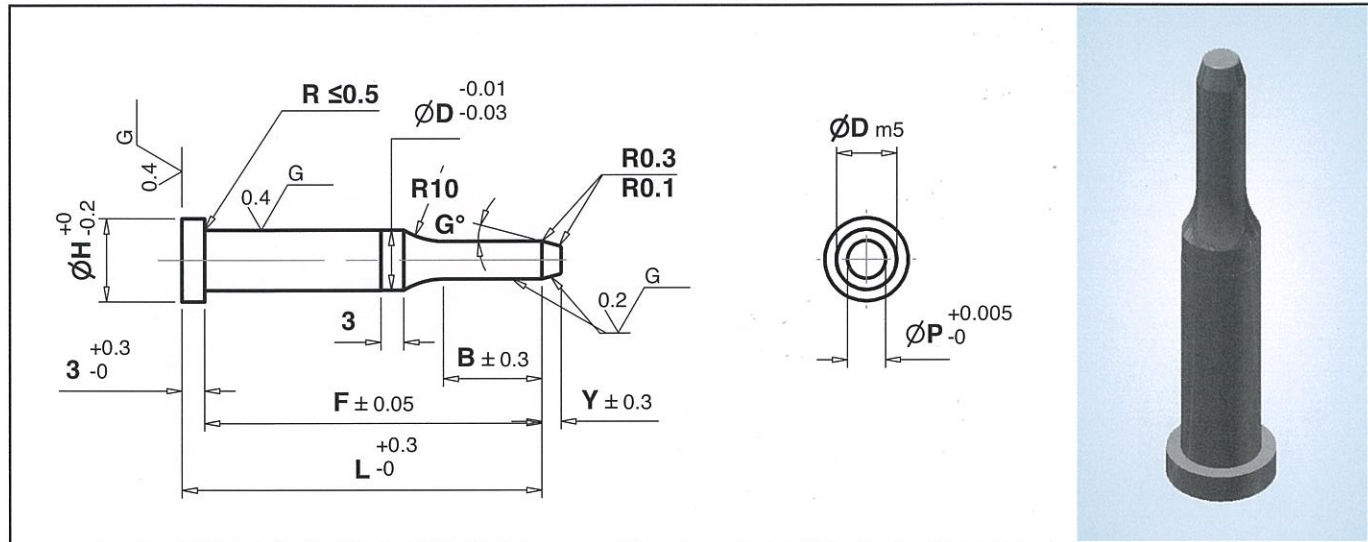
D Body Dia.	P Point Dia.	B Point Length	H Head Dia.	L – Length
1.6	0.800 – 1.590	4	2.6	10.0 – 32.0
2.0	1.000 – 1.990		3	
2.5	1.000 – 2.490		3.5	
3.0	1.000 – 2.990		5	10.0 – 40.0
4.0	2.000 – 3.990		7	
5.0	2.000 – 4.990		8	
6.0	2.500 – 15.990		9	

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBL – D – P – L**
 Example : **TCBL – D1.6 – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES

- FIXED IN STRIPPER PLATE, TIP TAPERED TYPE (**CCBM**)
- FIXED IN STRIPPER PLATE, TIP TAPERED TYPE WITH TiCN COATING (**TCBM**)



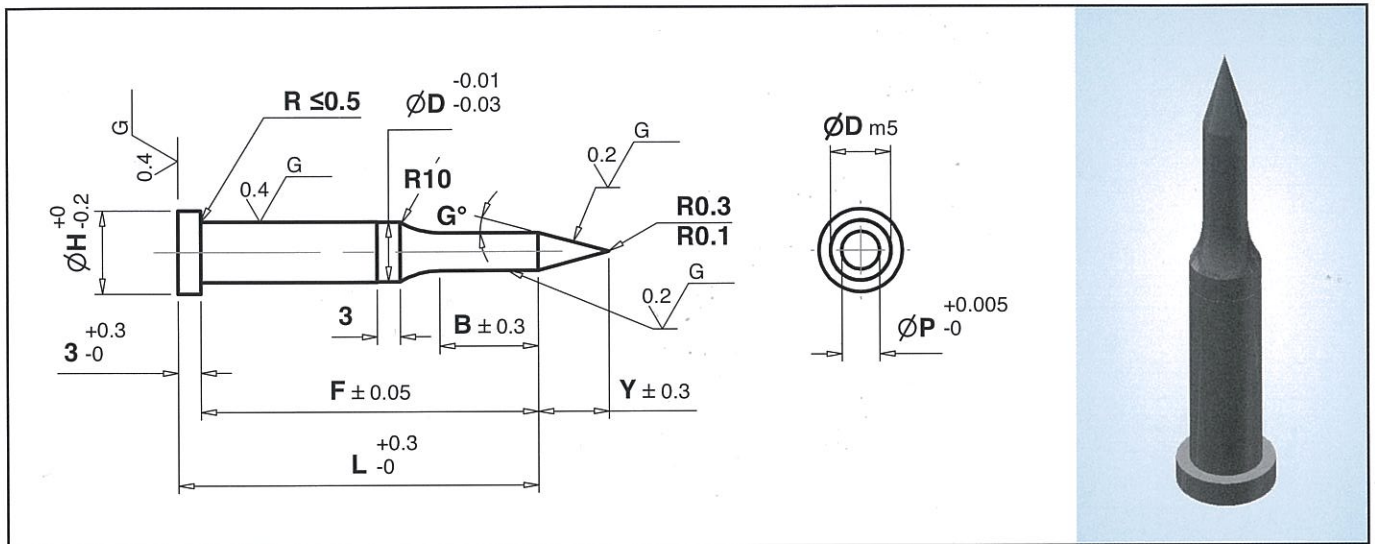
D Body Dia.	P Point Dia.	B Point Length	Y	H Head Dia.	L – Length
1.6	0.800 – 1.590	4	2	2.6	10.0 – 32.0
2.0	1.000 – 1.990			3	
2.5	1.000 – 2.490			3.5	
3.0	1.000 – 2.990			5	
4.0	2.000 – 3.990		7	10.0 – 40.0	
5.0	2.000 – 4.990		8		
6.0	2.500 – 15.990		9		

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBM – D – P – L**
 Example : **TCBM – D1.6 – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES

- FIXED IN STRIPPER PLATE, TIP ACUTE-ANGLE (CCBN)
- FIXED IN STRIPPER PLATE, TIP ACUTE-ANGLE WITH TiCN COATING (TCBN)



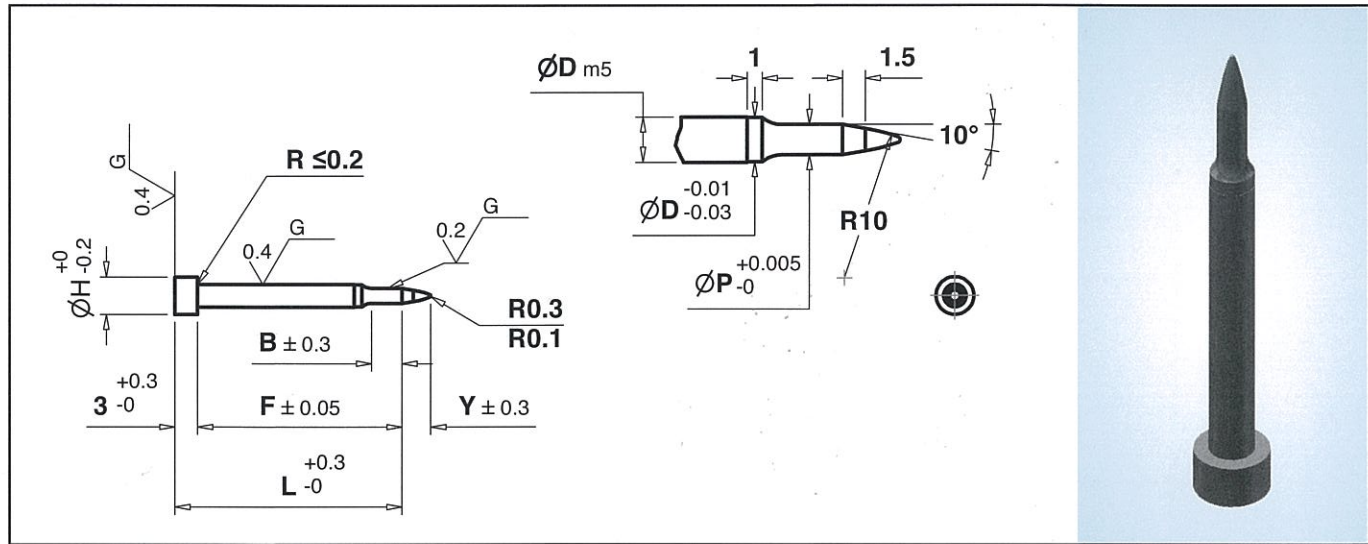
D Body Dia.	P Point Dia.	B Point Length	G	H Head Dia.	L – Length
1.6	0.800 – 1.590	4	15 20 25 30	2.6	10.0 – 32.0
2.0	1.000 – 1.990			3	
2.5	1.000 – 2.490			3.5	
3.0	1.000 – 2.990			5	10.0 – 40.0
4.0	2.000 – 3.990			7	
5.0	2.000 – 4.990			8	
6.0	2.500 – 15.990			9	

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBN – D – P – G – L**
 Example : **TCBN – D1.6 – P0.800 – G15 – L10.0**

SOLID CARBIDE PILOT PUNCHES

- FIXED IN STRIPPER PLATE, SHOULDER TYPE (**CCBP**)
- FIXED IN STRIPPER PLATE, SHOULDER TYPE WITH TiCN COATING (**TCBP**)



D Body Dia.	P Point Dia.	B Point Length	H Head Dia.	L – Length
1.6	0.800 – 1.599	4	2.6	10.0 – 32.0
2.0	1.000 – 1.999		3.0	
2.5	1.500 – 2.499		3.5	
3.0	2.000 – 2.999		5	10.0 – 40.0

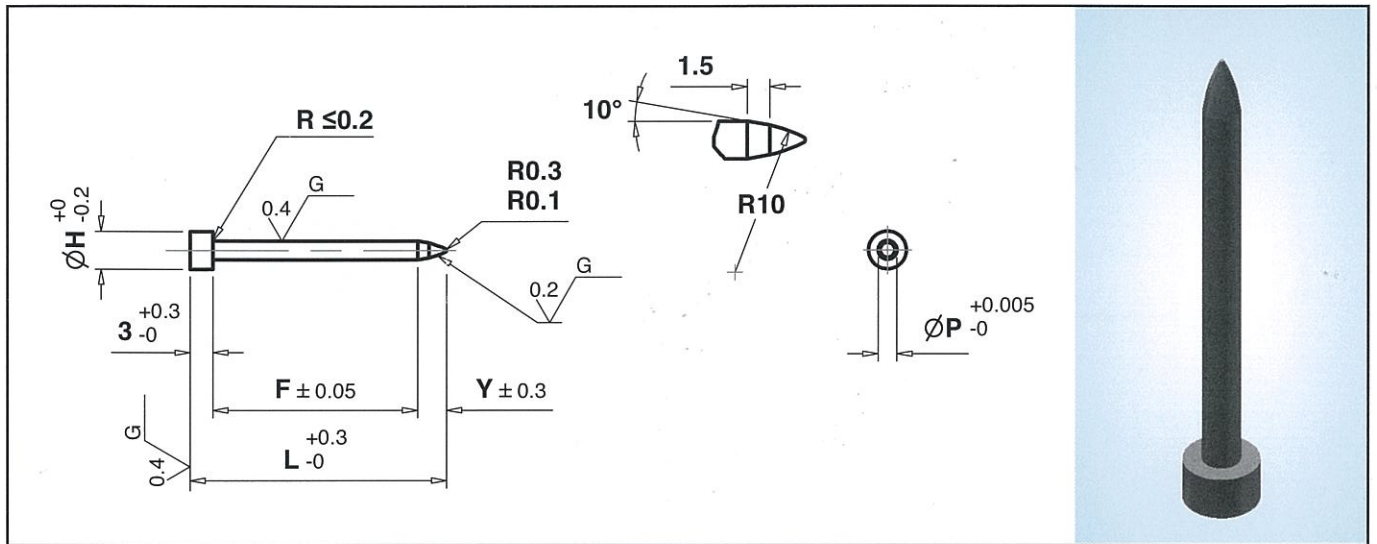
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBP – D – P – L**
 Example : **TCBP – D1.6 – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES



- FIXED IN STRIPPER PLATE, STRAIGHT TYPE (CCBQ)
- FIXED IN STRIPPER PLATE, STRAIGHT TYPE WITH TiCN COATING (TCBQ)



P Point Dia.	H Head Dia.	L – Length
0.800 – 1.599	2.6	10.0 – 32.0
1.000 – 1.999	3.0	
1.500 – 2.499	3.5	
2.000 – 2.999	5	10.0 – 40.0

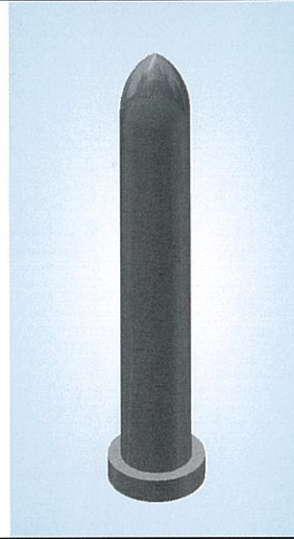
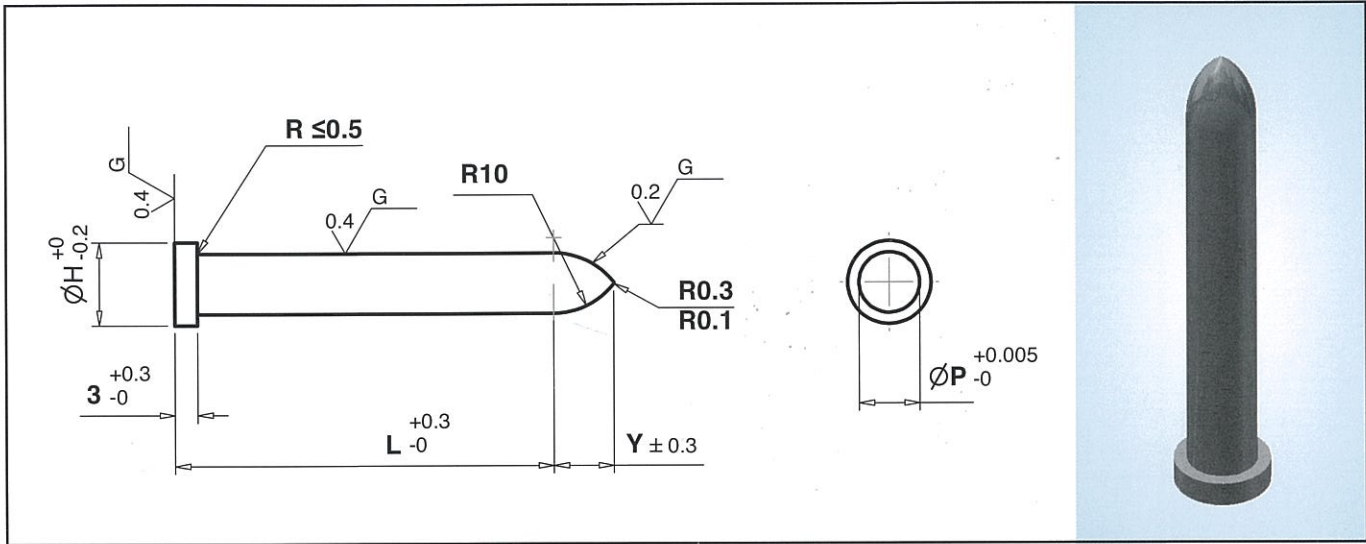
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBQ – P – L**
 Example : **TCBQ – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES



- FIXED IN STRIPPER PLATE, STRAIGHT TIP RTYPE (CCBR)
- FIXED IN STRIPPER PLATE, STRAIGHT TIP R TYPE WITH TiCN COATING (TCBR)



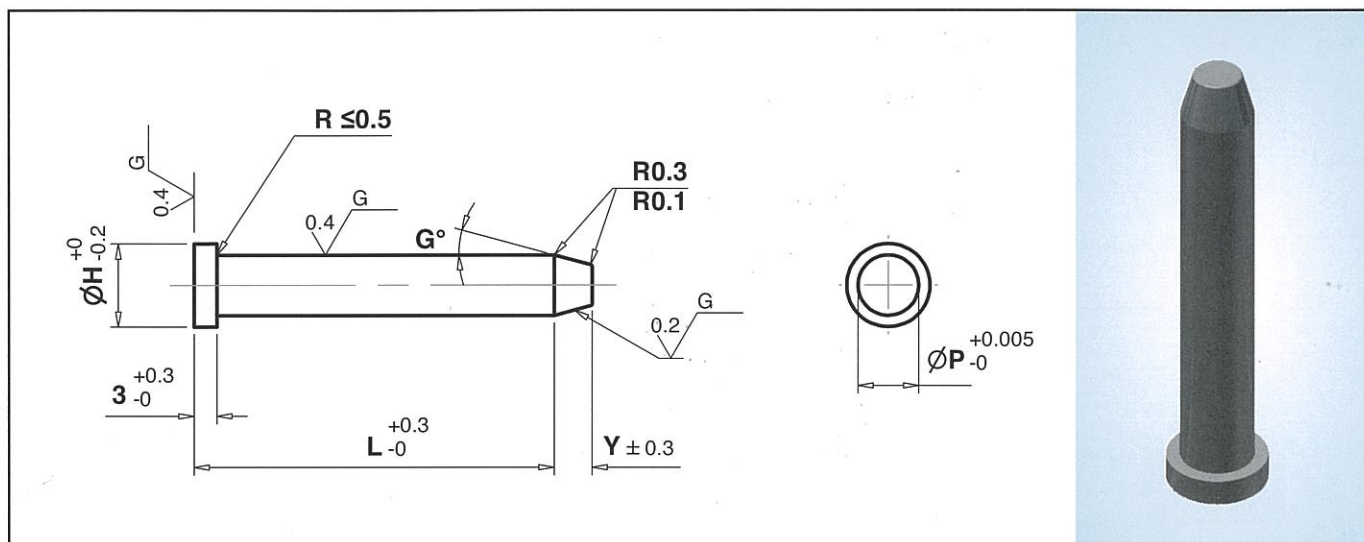
P Point Dia.	H Head Dia.	L – Length
0.800 – 1.590	2.6	10.0 – 32.0
1.000 – 1.990	3	
1.000 – 2.490	3.5	
1.000 – 2.990	5	10.0 – 40.0
2.000 – 3.990	7	
2.000 – 4.990	8	
2.500 – 15.990	9	

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBR – P – L**
 Example : **TCBR – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES

- FIXED IN STRIPPER PLATE, STRAIGHT TIP TAPERED TYPE (**CCBS**)
- FIXED IN STRIPPER PLATE, STRAIGHT TIP TAPERED TYPE WITH TiCN COATING (**TCBS**)



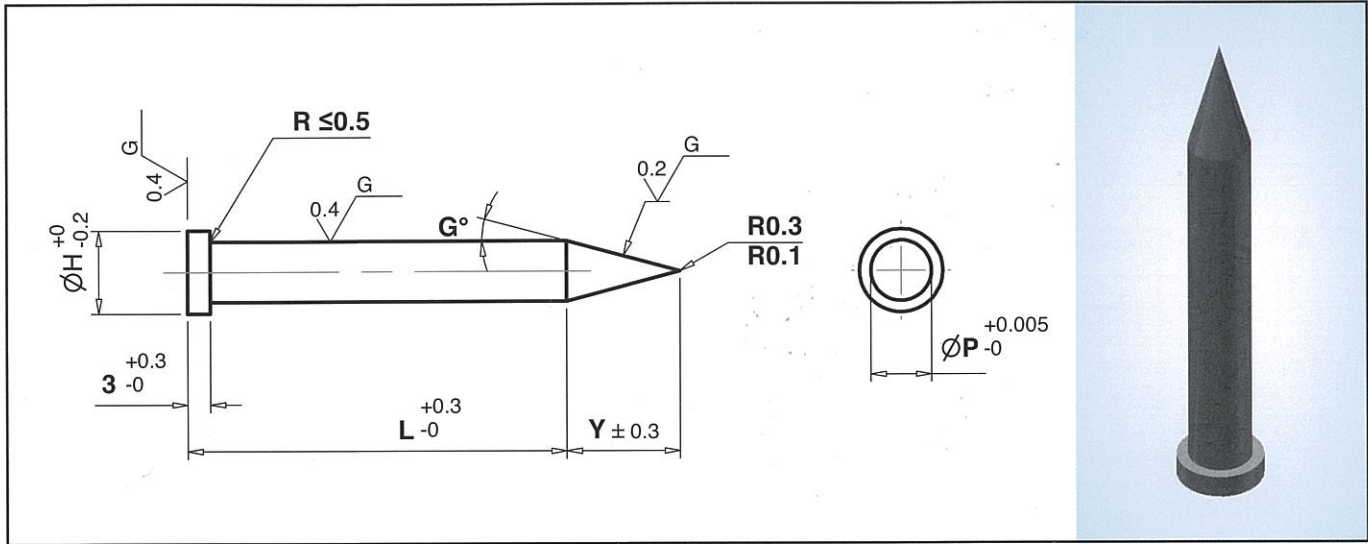
P Point Dia.	Y	H Head Dia.	L – Length
0.800 – 1.590	2	2.6	10.0 – 32.0
1.000 – 1.990		3	
1.000 – 2.490		3.5	
1.000 – 2.990	3	5	10.0 – 40.0
2.000 – 3.990		7	
2.000 – 4.990		8	
2.500 – 15.990		9	

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBS – P – L**
 Example : **TCBS – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES

- FIXED IN STRIPPER PLATE, STRAIGHT TIP ACUTE TYPE (CCBT)
- FIXED IN STRIPPER PLATE, STRAIGHT TIP ACUTE TYPE WITH TiCN COATING (TCBT)



P Point Dia.	G	H Head Dia.	L – Length
0.800 – 1.590	15 20 25 30	2.6	10.0 – 32.0
1.000 – 1.990		3	
1.000 – 2.490		3.5	
1.000 – 2.990		5	10.0 – 40.0
2.000 – 3.990		7	
2.000 – 4.990		8	
2.500 – 15.990		9	

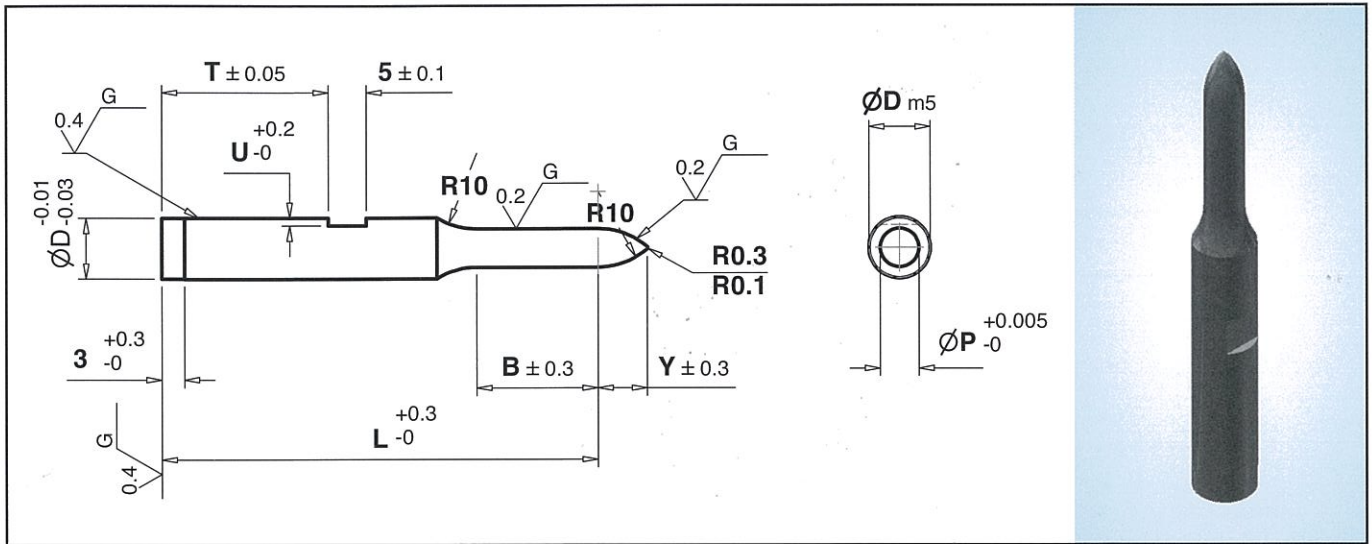
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCBT – P – G – L**
 Example : **TCBS – P0.800 – L10.0**

SOLID CARBIDE PILOT PUNCHES



- KEY GROOVE , TIP R TYPE (CCCL)
- KEY GROOVE , TIP R TYPE WITH TICN COATING (TCCL)



D Body Dia.	P Point Dia.	B Point Length	T	U	L – Length				
					40	50	60	70	80
3.0	1.500 – 2.990	8 – 13	T≥5.0	0.5	•	•	•		
4.0	1.500 – 3.990	8 – 13		0.5	•	•	•	•	
5.0	1.500 – 4.990	8 – 13		0.5	•	•	•	•	
6.0	2.000 – 5.990	8 – 13		1.0	•	•	•	•	
8.0	3.000 – 7.990	13 – 19		1.5	•	•	•	•	•
10.0	3.000 – 9.990	13 – 19		1.5	•	•	•	•	•
13.0	6.000 – 12.990	13 – 19		1.5	•	•	•	•	•
16.0	10.000 – 15.990	19 – 25		1.5	•	•	•	•	•
20.0	13.000 – 19.990	19 – 25		2.0	•	•	•	•	•
25.0	18.000 – 24.990	19 – 25		2.0	•	•	•	•	•

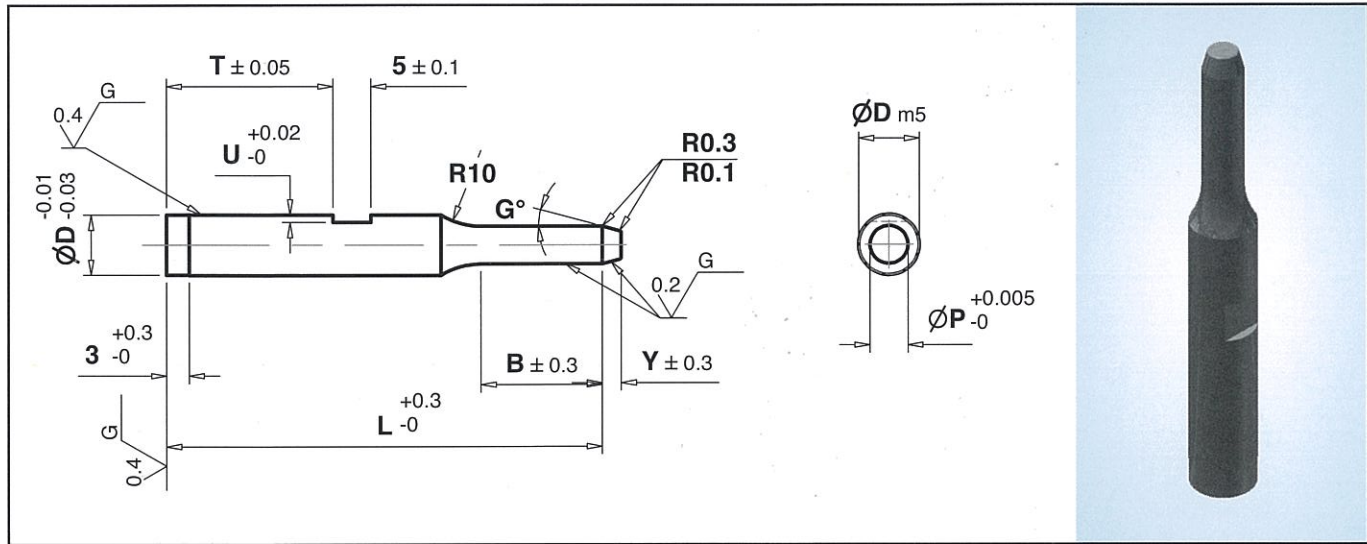
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCCL – D – P – B – T – L**
 Example : **TCCL – D3.0 – P1.500 – B8 – T6.0 – L40**

SOLID CARBIDE PILOT PUNCHES



- KEY GROOVE, TIP TAPERED TYPE (CCCM)
- KEY GROOVE, TIP TAPERED TYPE WITH TiCN COATING (TCCM)



D Body Dia.	P Point Dia.	B Point Length	T	Y	U	L – Length				
						40	50	60	70	80
3.0	1.500 – 2.990	8 – 13	T ≥ 5.0	2	0.5	•	•	•		
4.0	1.500 – 3.990	8 – 13			0.5	•	•	•	•	
5.0	1.500 – 4.990	8 – 13		3	0.5	•	•	•	•	
6.0	2.000 – 5.990	8 – 13			1.0	•	•	•	•	
8.0	3.000 – 7.990	13 – 19		5	1.5	•	•	•	•	•
10.0	3.000 – 9.990	13 – 19			1.5	•	•	•	•	•
13.0	6.000 – 12.990	13 – 19		8	1.5	•	•	•	•	•
16.0	10.000 – 15.990	19 – 25			1.5	•	•	•	•	•
20.0	13.000 – 19.990	19 – 25			2.0	•	•	•	•	•
25.0	18.000 – 24.990	19 – 25			2.0	•	•	•	•	•

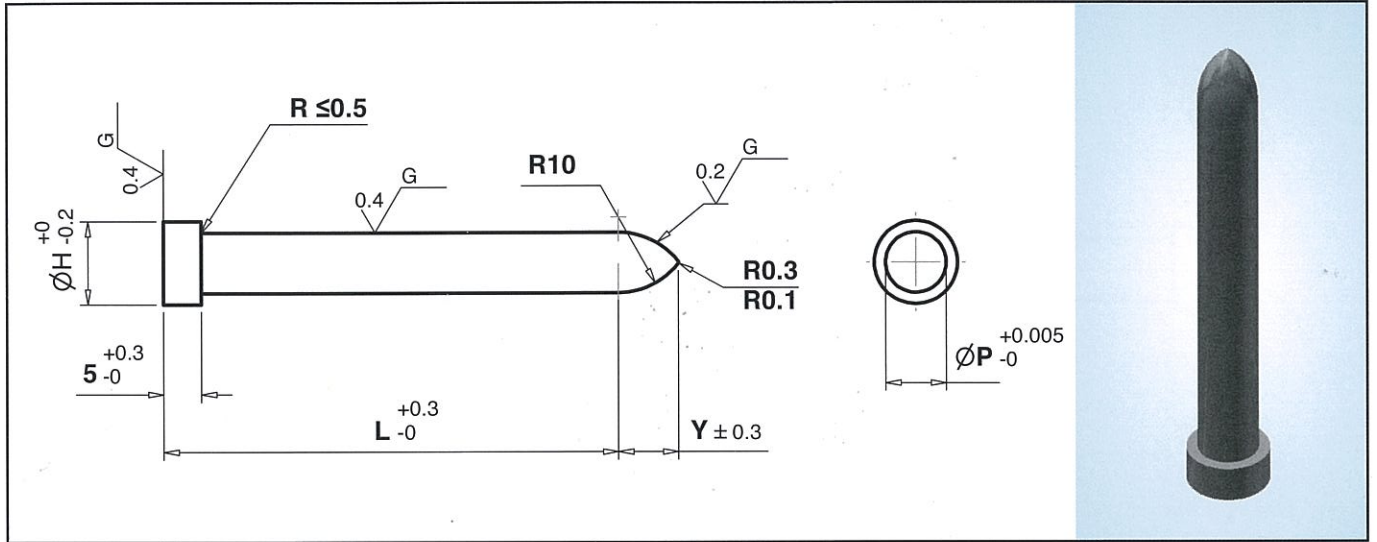
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCCM – D – P – B – T – L**
 Example : **TCCM – D3.0 – P1.500 – B8 – T6.0 – L40**

SOLID CARBIDE PILOT PUNCHES



- STRAIGHT PILOT, TIP R TYPE (CCDL)
- STRAIGHT PILOT, TIP R TYPE WITH TiCN COATING (TCDL)



P Point Dia.	H Head Dia.	L – Length				
		40	50	60	70	80
1.500 – 2.990	5.0	•	•	•		
1.500 – 3.990	7.0	•	•	•	•	
1.500 – 4.990	8.0	•	•	•	•	
2.000 – 5.990	9.0	•	•	•	•	
3.000 – 7.990	11.0	•	•	•	•	•
3.000 – 9.990	13.0	•	•	•	•	•
6.000 – 12.990	16.0	•	•	•	•	•
10.000 – 15.990	19.0	•	•	•	•	•
13.000 – 19.990	23.0	•	•	•	•	•
18.000 – 24.990	28.0	•	•	•	•	•

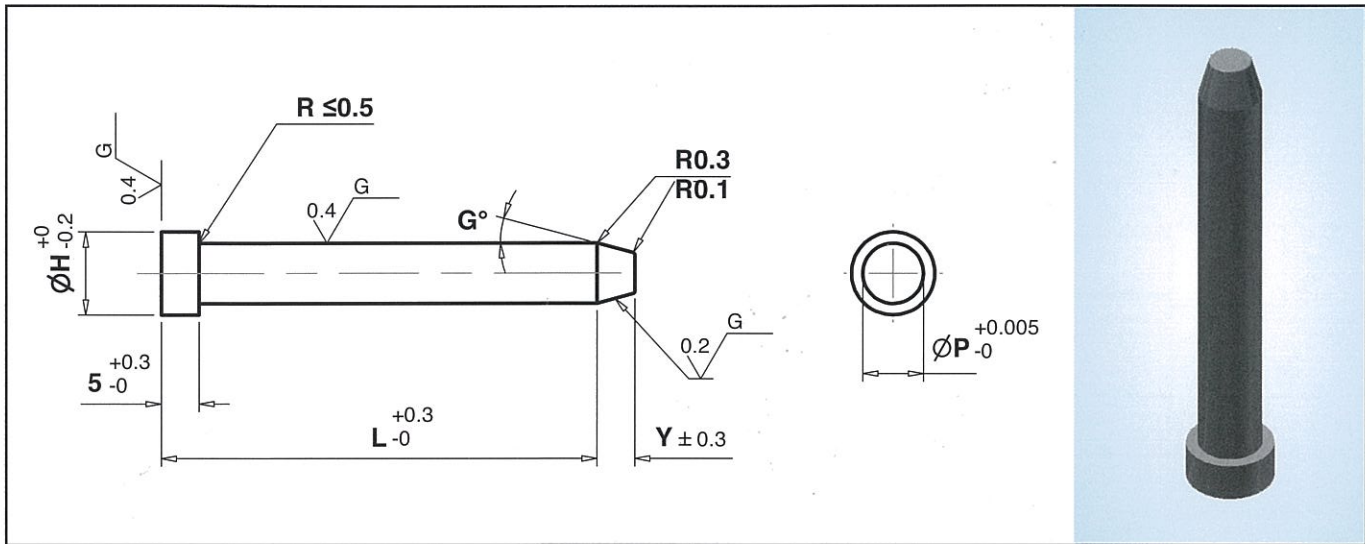
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCDL – P – L**
 Example : **TCDL – P1.500 – L40**

SOLID CARBIDE PILOT PUNCHES



- STRAIGHT PILOT, TIP TAPERED TYPE (**CCDM**)
- STRAIGHT PILOT, TIP TAPERED TYPE WITH TiCN COATING (**TCDM**)



P Point Dia.	Y	H Head Dia.	L – Length				
			40	50	60	70	80
1.500 – 2.990	2	5.0	•	•	•		
1.500 – 3.990		7.0	•	•	•	•	
1.500 – 4.990	3	8.0	•	•	•	•	
2.000 – 5.990		9.0	•	•	•	•	
3.000 – 7.990	5	11.0	•	•	•	•	•
3.000 – 9.990		13.0	•	•	•	•	•
6.000 – 12.990	8	16.0	•	•	•	•	•
10.000 – 15.990		19.0	•	•	•	•	•
13.000 – 19.990		23.0	•	•	•	•	•
18.000 – 24.990		28.0	•	•	•	•	•

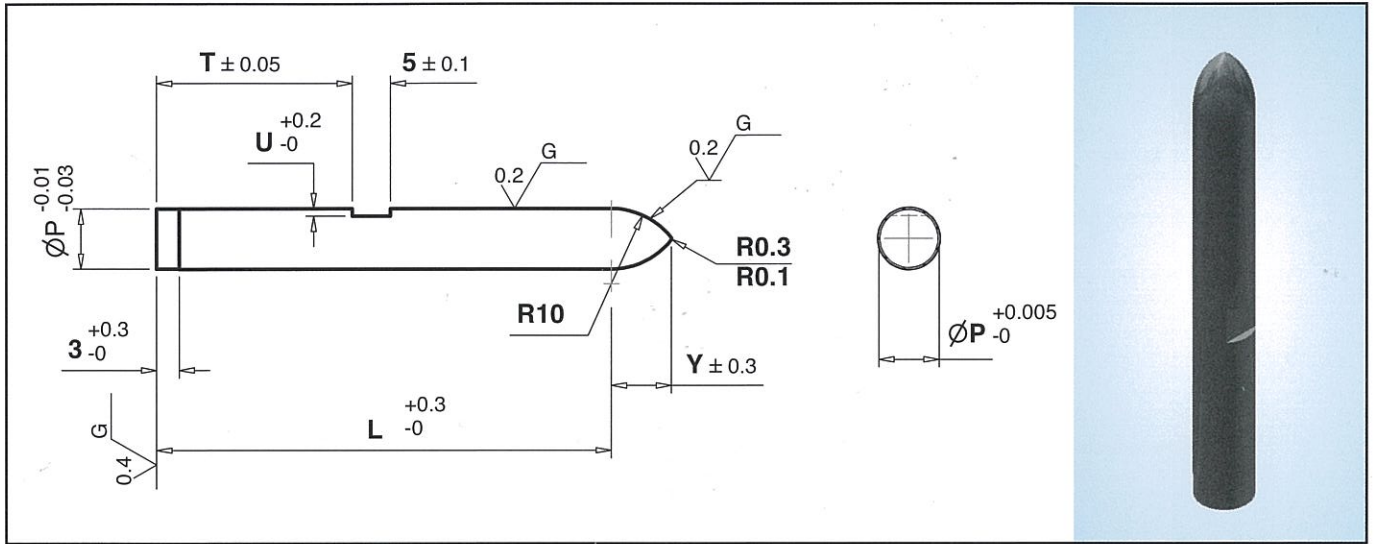
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCDM – P – L**
 Example : **TCDM – P1.500 – L40**

SOLID CARBIDE PILOT PUNCHES



- STRAIGHT KEY, TIP R TYPE (CCEL)
- STRAIGHT KEY, TIP R TYPE WITH TiCN COATING (TCEL)



P Point Dia.	B Point Length	T	U	L – Length				
				40	50	60	70	80
1.500 – 2.990	8 – 13	T ≥ 5.0	0.5	•	•	•		
1.500 – 3.990	8 – 13		0.5	•	•	•	•	
1.500 – 4.990	8 – 13		0.5	•	•	•	•	
2.000 – 5.990	8 – 13		1.0	•	•	•	•	
3.000 – 7.990	13 – 19		1.5	•	•	•	•	•
3.000 – 9.990	13 – 19		1.5	•	•	•	•	•
6.000 – 12.990	13 – 19		1.5	•	•	•	•	•
10.000 – 15.990	19 – 25		1.5	•	•	•	•	•
13.000 – 19.990	19 – 25		2.0	•	•	•	•	•
18.000 – 24.990	19 – 25		2.0	•	•	•	•	•

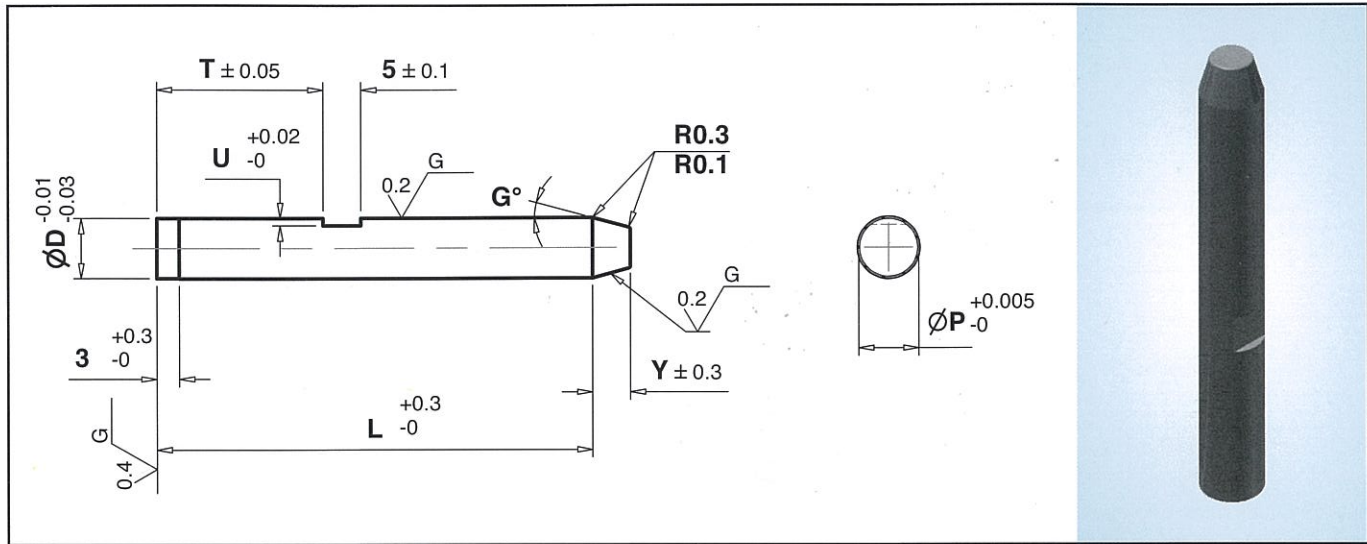
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCEL – P – B – T – L**
 Example : **TCEL – P1.500 – B8 – T6.0 – L40**

SOLID CARBIDE PILOT PUNCHES



- STRAIGHT KEY, TIP TAPERED TYPE (CCEM)
- STRAIGHT KEY, TIP TAPERED TYPE WITH TiCN COATING (TCEM)



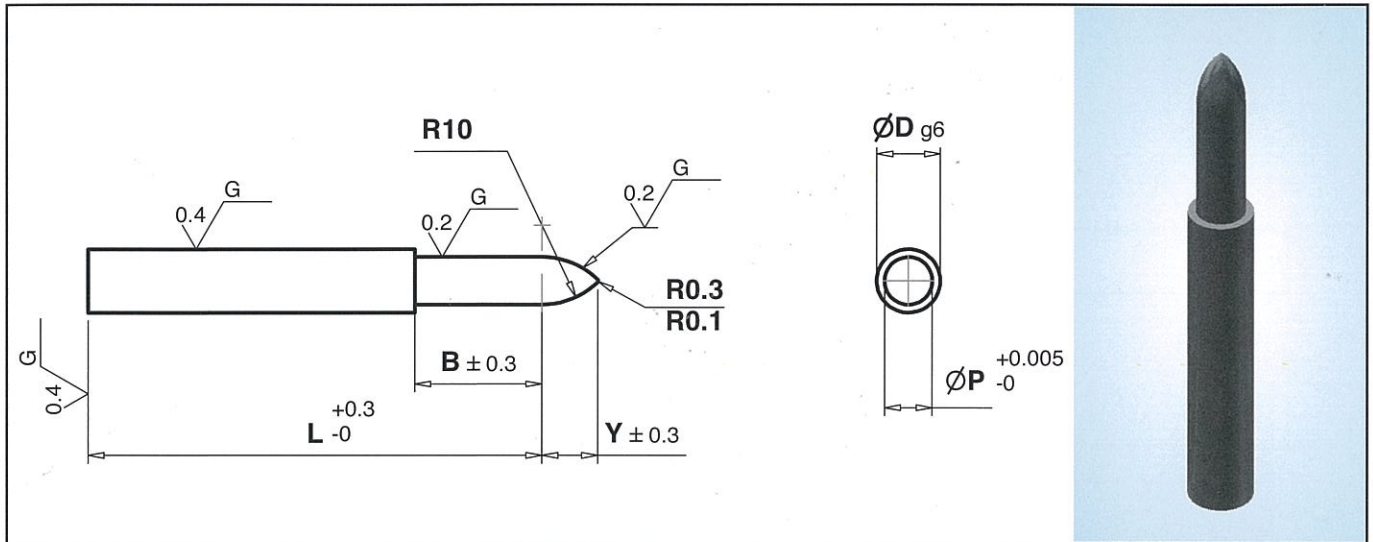
P Point Dia.	B Point Length	T	Y	U	L – Length				
					40	50	60	70	80
1.500 – 2.990	8 – 13	T ≥ 5.0	2	0.5	•	•	•		
1.500 – 3.990	8 – 13			0.5	•	•	•	•	
1.500 – 4.990	8 – 13		3	0.5	•	•	•	•	
2.000 – 5.990	8 – 13			1.0	•	•	•	•	
3.000 – 7.990	13 – 19		5	1.5	•	•	•	•	•
3.000 – 9.990	13 – 19			1.5	•	•	•	•	•
6.000 – 12.990	13 – 19		8	1.5	•	•	•	•	•
10.000 – 15.990	19 – 25			1.5	•	•	•	•	•
13.000 – 19.990	19 – 25			2.0	•	•	•	•	•
18.000 – 24.990	19 – 25			2.0	•	•	•	•	•

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCEM – P – B – T – L**
 Example : **TCEM – P1.500 – B8 – T6.0 – L40**

SOLID CARBIDE PILOT PUNCHES

- MOVABLE, TIP R TYPE (CCFL)
- MOVABLE, TIP R TYPE WITH TICN COATING (TCFL)



D Body Dia.	P Point Dia.	B Point Length	L – Length				
			42	52	62	72	82
3.0	1.000 – 2.500	5 – 23	•	•	•		
4.0	1.500 – 3.500	5 – 23	•	•	•	•	
5.0	2.000 – 4.500	5 – 23	•	•	•	•	
6.0	2.500 – 5.500	5 – 23	•	•	•	•	
8.0	3.000 – 7.500	5 – 23	•	•	•	•	•

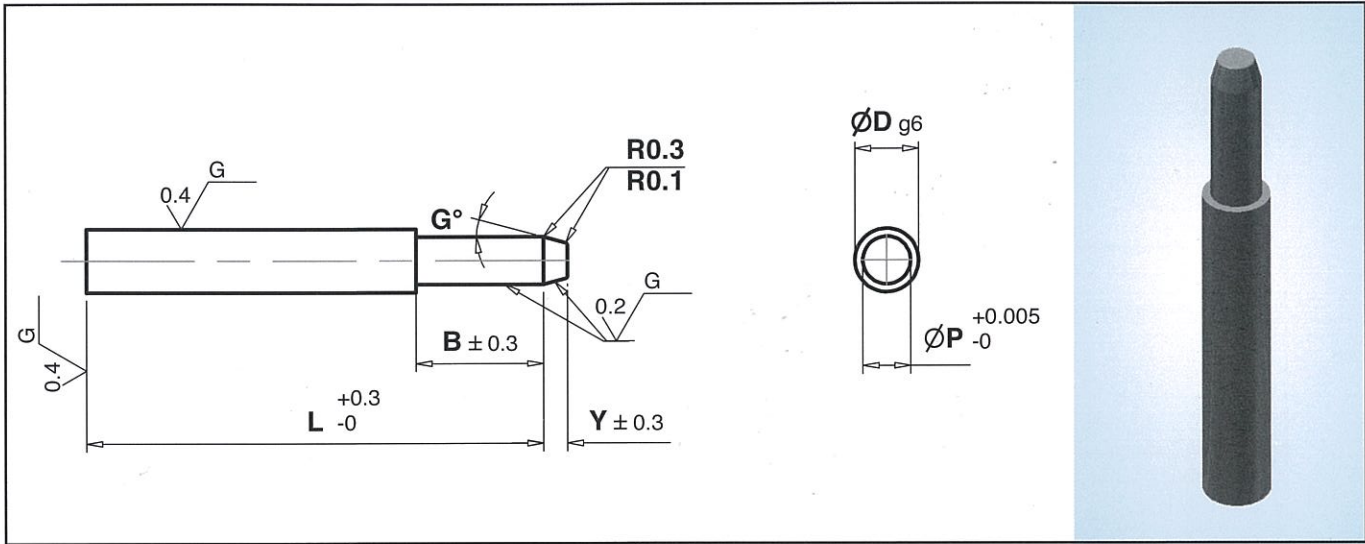
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCFL – D – P – B – L**
 Example : **TCFL – D3.0 – P10500 – B5 – L42**

SOLID CARBIDE PILOT PUNCHES



- MOVABLE, TIP TAPERED TYPE (CCFM)
- MOVABLE, TIP TAPERED TYPE WITH TiCN COATING (TCFM)



D Body Dia.	P Point Dia.	B Point Length	Y	L – Length				
				42	52	62	72	82
3.0	1.000 – 2.500	5 – 23	2	•	•	•		
4.0	1.500 – 3.500	5 – 23		•	•	•	•	
5.0	2.000 – 4.500	5 – 23	3	•	•	•	•	
6.0	2.500 – 5.500	5 – 23		•	•	•	•	
8.0	3.000 – 7.500	5 – 23	5	•	•	•	•	•

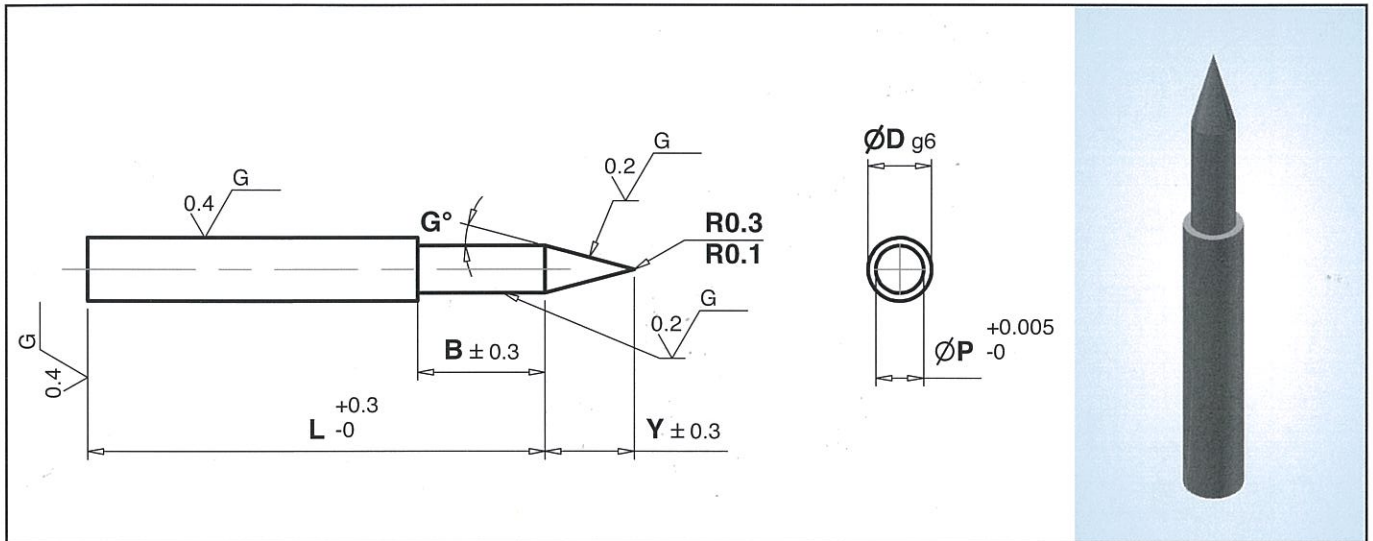
Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : CCFM – D – P – B – L/
 Example : TCFM – D3.0 – P1.000 – B5 – L42

SOLID CARBIDE PILOT PUNCHES



- MOVABLE, TIP ACUTE-ANGLE TYPE (CCFN)
- MOVABLE, TIP ACUTE-ANGLE TYPE WITH TiCN COATING (TCFN)



D Body Dia.	P Point Dia.	B Point Length	L – Length				
			42	52	62	72	82
3.0	1.000 – 2.500	5 – 23	•	•	•		
4.0	1.500 – 3.500	5 – 23	•	•	•	•	
5.0	2.000 – 4.500	5 – 23	•	•	•	•	
6.0	2.500 – 5.500	5 – 23	•	•	•	•	
8.0	3.000 – 7.500	5 – 23	•	•	•	•	•

Note: Other Dimension Not Listed above can be ground to your specifications.
 If in doubt please send us your drawing. 'D' tolerance is m5 or +0.005.
 Unless otherwise specified by customer all outside corners will be sharp.

How to order : **CCFN – D – P – B – L**
 Example : **TCFN – D3.0 – P1.000 – B5 – L42**