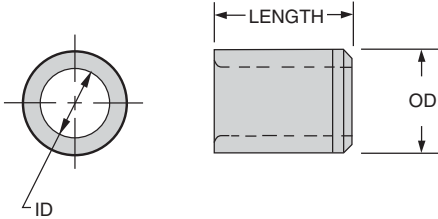




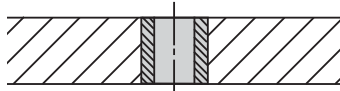
PRESS FIT

P



APPLICATIONS:

This is the most-popular and least-expensive drill bushing. P bushings are permanently pressed into the jig plate, usually flush with the top surface. They are generally used for single-step drilling or reaming operations when you do not expect to replace bushings during the tooling's lifetime. P bushings can be mounted closer together than headed bushings, but offer less resistance to heavy axial loads.



ORDERING EXAMPLES:

- | | |
|----------------------|--|
| P-20-16-.1250 | Standard USA bushing, inch ID |
| P-20-16-.1772 | Standard USA bushing, mm ID (.1772 = 4.50mm) |
| P-20-16U-.1250 | Unground OD |
| P-20-16-.1250 REAMER | Reamer tolerance on ID |
| P-20-16-.1250 NCB | No counterbore on long bushings marked with * (no counterbore is standard on all other bushings) |
| PC-20-16-.1250 | Carbide bushing |
| PM-8-12-4.50 | Standard metric bushing |

Standard prices apply only to bushings with a standard-drill-size ID with the stated ID range. See catalog back cover for standard drill sizes and their decimal equivalents. For prices on non-standard ID sizes, including reamer-tolerance and tap-guide bushings, please contact factory.

STANDARD ID TOLERANCES:

From #80 to 1/4" + .0001/+ .0004	From .35 to 3mm +.002/+ .008mm
Over 1/4 to 3/4" + .0001/+ .0005	Over 3 to 6mm +.004/+ .012mm
Over 3/4 to 1-1/2" + .0002/+ .0006	Over 6 to 10mm +.005/+ .014mm
Over 1-1/2 to 2-3/4" + .0003/+ .0007	Over 10 to 18mm +.006/+ .017mm
	Over 18 to 30mm +.007/+ .020mm
	Over 30 to 50mm +.009/+ .025mm
	Over 50 to 80mm +.010/+ .029mm
	Over 80 to 120mm +.012/+ .034mm (G6 tolerance)

REAMER ID TOLERANCES:

From #60 to 1/4" + .0005/+ .0008	From 1 to 3mm +.006/+ .012mm
Over 1/4 to 1" + .0006/+ .0010	Over 3 to 6mm +.010/+ .018mm
Over 1" to 1-1/2" + .0008/+ .0012	Over 6 to 10mm +.013/+ .022mm
	Over 10 to 18mm +.016/+ .027mm
	Over 18 to 30mm +.020/+ .033mm (F6 tolerance)

ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5	
.0135-.0291 #80-#70 .35-.70mm	5/32 .1578-.1575 (.166-.161 UNG)	1/4	P-10-4		
		5/16	P-10-5		
		3/8	P-10-6		
		*1/2	P-10-8		
.0292-.0519 #69-3/64 .75-1.25mm		1/4	P-10-4		
		5/16	P-10-5		
		3/8	P-10-6		
		*1/2	P-10-8		
.0520-.0625 #55-1/16 1.30-1.60mm		*3/4	P-10-12		
		1/4	P-10-4		
		5/16	P-10-5		
		3/8	P-10-6		
.0520-.0634 #55-1/16 1.30-1.60mm	3/16 .1891-.1888 (.201-.197 UNG)	*1/2	P-10-8		
		*3/4	P-10-12		
		1/4	P-12-4		
		5/16	P-12-5		
		3/8	P-12-6		
		*1/2	P-12-8		
.0635-.0995 #52-#39 1.65-2.50mm	*5/8	P-12-10			
	*3/4	P-12-12			
	1/4	P-12-4			
	5/16	P-12-5			
.0135-.0291 #80-#70 .35-.70mm	13/64 .2046-.2043 (.213-.208 UNG)	3/8	P-12-6		
		*1/2	P-12-8		
		5/8	P-12-10		
		*3/4	P-12-12		
.0292-.0519 #69-3/64 .75-1.30mm		1/4	P-13-4		
		5/16	P-13-5		
		3/8	P-13-6		
		*1/2	P-13-8		
.0520-.0634 #55-1/16 1.35mm-1.60mm		*3/4	P-13-12		
		*1	P-13-16		
		1/4	P-13-4		
		5/16	P-13-5		
	3/8	P-13-6			
	1/2	P-13-8			
.0635-.0995 #52-#39 1.65-2.50mm	*3/4	P-13-12			
	*1	P-13-16			
	*1-3/8	P-13-22			
	5/16	P-13-5			
	3/8	P-13-6			
	1/2	P-13-8			
	*3/4	P-13-12			
	*1	P-13-16			

Please see our web catalog for pricing.

* Counterbored, leaving correct drill-bearing length and clearance (see page 514 for bearing length).

QUANTITY DISCOUNTS

Quantity	1	6	12	24	50	100	200	500
	-5	-11	-23	-49	-99	-199	-499	Up
Discount %	Net	18%	29%	34%	42%	48%	50%	52%
Multiplier	1.00	.82	.71	.66	.58	.52	.50	.48

P PRESS FIT



ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
.0980-.1406 #40-9/64 2.50-3.50mm	1/4 .2516-.2513 (.265-.260 UNG)	1/4	P-16-4	
		5/16	P-16-5	
		3/8	P-16-6	
		1/2	P-16-8	
		5/8	P-16-10	
		*3/4	P-16-12	
		*1	P-16-16	
		*1-3/8	P-16-22	
		*1-1/2	P-16-24	
		*1-3/4	P-16-28	
.1250-.1935 1/8-#10 3.20-4.90mm	5/16 .3141-.3138 (.327-.322 UNG)	1/4	P-20-4	
		5/16	P-20-5	
		3/8	P-20-6	
		1/2	P-20-8	
		5/8	P-20-10	
		3/4	P-20-12	
		*1	P-20-16	
		*1-3/8	P-20-22	
		*1-1/2	P-20-24	
		*1-3/4	P-20-28	
.1935-.2280 #10-#1 4.90-5.80mm	3/8 .3766-.3763 (.390-.385 UNG)	1/4	P-24-4	
		5/16	P-24-5	
		3/8	P-24-6	
		1/2	P-24-8	
		5/8	P-24-10	
		3/4	P-24-12	
		*1	P-24-16	
.1875-.2570 3/16-F 4.75-6.50mm	13/32 .4078-.4075 (.421-.416 UNG)	1/4	P-26-4	
		5/16	P-26-5	
		3/8	P-26-6	
		1/2	P-26-8	
		3/4	P-26-12	
		*1	P-26-16	
		*1-3/8	P-26-22	
		*1-1/2	P-26-24	
.2340-.2900 A-L 5.90-7.40mm	7/16 .4392-.4389 (.453-.448 UNG)	1/4	P-28-4	
		5/16	P-28-5	
		3/8	P-28-6	
		1/2	P-28-8	
		5/8	P-28-10	
		3/4	P-28-12	
		*1	P-28-16	
.1875-.3160 3/16-O 4.75-8.00mm	1/2 .5017-.5014 (.520-.515 UNG)	1/4	P-32-4	
		5/16	P-32-5	
		3/8	P-32-6	
		1/2	P-32-8	
		3/4	P-32-12	
		*1	P-32-16	
		*1-3/8	P-32-22	
		*1-1/2	P-32-24	
		*1-3/4	P-32-28	
		*2-1/8	P-32-34	

Please see our web catalog for pricing.

ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
.2950-.3438 M-11/32 7.50-8.75mm	9/16 .5642-.5639 (.582-.577 UNG)	1/4	P-36-4	
		5/16	P-36-5	
		3/8	P-36-6	
		1/2	P-36-8	
		5/8	P-36-10	
		3/4	P-36-12	
		1	P-36-16	
.3125-.4375 5/16-7/16 7.90-11.00mm	5/8 .6267-.6264 (.645-.640 UNG)	1/4	P-40-4	
		5/16	P-40-5	
		3/8	P-40-6	
		1/2	P-40-8	
		5/8	P-40-10	
		3/4	P-40-12	
		1	P-40-16	
		1-1/4	P-40-20	
		1-3/8	P-40-22	
		1-1/2	P-40-24	
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	1/4	P-48-4	
		5/16	P-48-5	
		3/8	P-48-6	
		1/2	P-48-8	
		5/8	P-48-10	
		3/4	P-48-12	
		1	P-48-16	
		1-1/4	P-48-20	
		1-3/8	P-48-22	
		1-1/2	P-48-24	
.5000-.6562 1/2-21/32 12.50-16.50mm	7/8 .8768-.8765 (.895-.890 UNG)	5/16	P-56-5	
		3/8	P-56-6	
		1/2	P-56-8	
		5/8	P-56-10	
		3/4	P-56-12	
		1	P-56-16	
		1-1/4	P-56-20	
		1-3/8	P-56-22	
		1-1/2	P-56-24	
		1-3/4	P-56-28	
2-1/8	P-56-34			
2-1/2	P-56-40			

Please see our web catalog for pricing.

QUANTITY DISCOUNTS

Quantity	1	6	12	24	50	100	200	500
	-5	-11	-23	-49	-99	-199	-499	Up
Discount %	Net	18%	29%	34%	42%	48%	50%	52%
Multiplier	1.00	.82	.71	.66	.58	.52	.50	.48

* Counterbored, leaving correct drill-bearing length and clearance (see page 514 for bearing length).



PRESS FIT

P

ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
.5000-.7656 1/2-49/64 12.50-19.50mm	1 1.0018-1.0015 (1.020-1.015 UNG)	1/2	P-64-8	
		5/8	P-64-10	
		3/4	P-64-12	
		1	P-64-16	
		1-1/4	P-64-20	
		1-3/8	P-64-22	
		1-1/2	P-64-24	
		1-3/4	P-64-28	
		2-1/8	P-64-34	
		2-1/2	P-64-40	
.7656-.8438 49/64-27/32 19.50-21.50mm	1-1/8 1.1270-1.1267 (1.145-1.140 UNG)	1/2	P-72-8	
		5/8	P-72-10	
		3/4	P-72-12	
		1	P-72-16	
		1-1/4	P-72-20	
		1-1/2	P-72-24	
		1-3/4	P-72-28	
.8594-.9375 55/64-15/16 22.00-24.00mm	1-1/4 1.2520-1.2517 (1.270-1.265 UNG)	5/8	P-80-10	
		3/4	P-80-12	
		1	P-80-16	
		1-1/4	P-80-20	
		1-1/2	P-80-24	
		1-3/4	P-80-28	
		2	P-80-32	
.6250-1.0312 5/8-1-1/32 16.00-26.00mm	1-3/8 1.3772-1.3768 (1.395-1.390 UNG)	1/2	P-88-8	
		5/8	P-88-10	
		3/4	P-88-12	
		1	P-88-16	
		1-1/4	P-88-20	
		1-3/8	P-88-22	
		1-1/2	P-88-24	
		1-3/4	P-88-28	
		2	P-88-32	
		2-1/8	P-88-34	
1.0156-1.1250 1-1/64-1-1/8 26.00-29.00mm	1-1/2 1.5021-1.5018 (1.520-1.515 UNG)	3/4	P-96-12	
		1	P-96-16	
		1-1/4	P-96-20	
		1-1/2	P-96-24	
		1-3/4	P-96-28	
		2	P-96-32	
		2-1/4	P-96-36	

Please see our web catalog for pricing.

ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
1.0000-1.3906 1-1-25/64 25.00-35.00mm	1-3/4 1.7523-1.7519 (1.770-1.765 UNG)	3/4	P-112-12	
		1	P-112-16	
		1-3/8	P-112-22	
		1-1/2	P-112-24	
		1-3/4	P-112-28	
		2-1/8	P-112-34	
		2-1/2	P-112-40	
1.3750-1.7656 1-3/8-1-49/64 35.00-45.00mm	2-1/4 2.2525-2.2521 (2.270-2.265 UNG)	1	P-144-16	
		1-3/8	P-144-22	
		1-1/2	P-144-24	
		1-3/4	P-144-28	
		2-1/8	P-144-34	
		2-1/2	P-144-40	
		3	P-144-48	

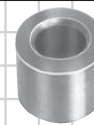
Please see our web catalog for pricing.

For extended-range bushings (larger sizes) please see our web catalog.

QUANTITY DISCOUNTS

Quantity	1	6	12	24	50	100	200	500
	-5	-11	-23	-49	-99	-199	-499	Up
Discount %	Net	18%	29%	34%	42%	48%	50%	52%
Multiplier	1.00	.82	.71	.66	.58	.52	.50	.48

PC PRESS FIT CARBIDE



ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
.0280-.0468 #70-#56 .75-1.15mm	5/32	5/16	PC-10-5	Contact Factory
		1/2	PC-10-8	
.0469-.0625 3/64-1/16 1.20-1.55mm	.1578-.1575	5/16	PC-10-5	Contact Factory
		1/2	PC-10-8	
.0550-.0995 #54-#39 1.40-2.50mm	13/64 .2046-.2043	5/16	PC-13-5	Contact Factory
		1/2	PC-13-8	
.0995-.1360 #39-#29 2.55-3.40mm	1/4 .2516-.2513	5/16	PC-16-5	Contact Factory
		1/2	PC-16-8	
.1285-.1875 #30-3/16 3.30-4.75mm	5/16 .3141-.3138	5/16	PC-20-5	Contact Factory
		1/2	PC-20-8	
		3/4	PC-20-12	
		1	PC-20-16	
.1875-.2500 3/16-1/4 4.80-6.30mm	13/32 .4078-.4075	5/16	PC-26-5	Contact Factory
		1/2	PC-26-8	
		3/4	PC-26-12	
		1	PC-26-16	
.2188-.3125 7/32-5/16 5.60-7.90mm	1/2 .5017-.5014	5/16	PC-32-5	Contact Factory
		1/2	PC-32-8	
		3/4	PC-32-12	
		1	PC-32-16	
.3125-.4219 5/16-27/64 8.00-10.50mm	5/8 .6267-.6264	1/2	PC-40-8	Contact Factory
		3/4	PC-40-12	
		1	PC-40-16	
		1-3/8	PC-40-22	
.3750-.5000 3/8-1/2 9.60-12.50mm	3/4 .7518-.7515	1/2	PC-48-8	Contact Factory
		3/4	PC-48-12	
		1	PC-48-16	
		1-3/8	PC-48-22	
.5000-.6250 1/2-5/8 13.00-15.50mm	7/8 .8768-.8765	1/2	PC-56-8	Contact Factory
		3/4	PC-56-12	
		1	PC-56-16	
		1-3/8	PC-56-22	
		1-3/4	PC-56-28	

ID RANGE	OD	LENGTH	ANSI PART NO.	PRICE 1-5
.5000-.7500 1/2-3/4 13.00-19.00mm	1 1.0018-1.0015	1/2	PC-64-8	Contact Factory
		3/4	PC-64-12	
		1	PC-64-16	
		1-3/8	PC-64-22	
.7500-1.0000 3/4-1 19.50-25.00mm	1-3/8 1.3772-1.3768	3/4	PC-88-12	Contact Factory
		1	PC-88-16	
		1-3/8	PC-88-22	
		1-3/4	PC-88-28	
1.0000-1.3750 1-1-3/8 26.00-34.00mm	1-3/4 1.7523-1.7519	2-1/8	PC-88-34	Contact Factory
		2-1/2	PC-88-40	
		1	PC-112-16	
		1-3/8	PC-112-22	
1.3750-1.7500 1-3/8-1-3/4 35.00-44.00mm	2-1/4 2.2525-2.2521	1-3/4	PC-112-28	Contact Factory
		2-1/8	PC-112-34	
		2-1/2	PC-112-40	
		3	PC-112-48	
1.3750-1.7500 1-3/8-1-3/4 35.00-44.00mm	2-1/4 2.2525-2.2521	1	PC-144-16	Contact Factory
		1-3/8	PC-144-22	
		1-3/4	PC-144-28	
		2-1/8	PC-144-34	
		2-1/2	PC-144-40	
1.3750-1.7500 1-3/8-1-3/4 35.00-44.00mm	2-1/4 2.2525-2.2521	3	PC-144-48	Contact Factory



PRESS FIT METRIC

PM

ID RANGE (G6)	OD (s6)	LENGTH	ANSI PART NO.	PRICE 1-5
.35-1.00mm	4mm 4.027-4.019mm	*6mm	PM-4-6	Please see our web catalog for pricing.
		*9mm	PM-4-9	
		6mm	PM-4-6	
1.01-1.80mm	5mm 5.027-5.019mm	9mm	PM-4-9	
1.81-2.60mm		6mm	PM-5-6	
		9mm	PM-5-9	
2.61-3.30mm	6mm 6.027-6.019mm	8mm	PM-6-8	
		12mm	PM-6-12	
		16mm	PM-6-16	
3.31-4.00mm	7mm 7.032-7.023mm	8mm	PM-7-8	
		12mm	PM-7-12	
		16mm	PM-7-16	
4.01-5.00mm	8mm 8.032-8.023mm	8mm	PM-8-8	
		12mm	PM-8-12	
		16mm	PM-8-16	
5.01-6.00mm	10mm 10.032-10.023mm	10mm	PM-10-10	
		16mm	PM-10-16	
		20mm	PM-10-20	
6.01-8.00mm	12mm 12.039-12.028mm	10mm	PM-12-10	
		16mm	PM-12-16	
		20mm	PM-12-20	
8.01-10.00mm	15mm 15.039-15.028mm	12mm	PM-15-12	
		20mm	PM-15-20	
		25mm	PM-15-25	
10.01-12.00mm	18mm 18.039-18.028mm	12mm	PM-18-12	
		20mm	PM-18-20	
		25mm	PM-18-25	
12.01-15.00mm	22mm 22.048-22.035mm	16mm	PM-22-16	
		28mm	PM-22-28	
		36mm	PM-22-36	
15.01-18.00mm	26mm 26.048-26.035mm	16mm	PM-26-16	
		28mm	PM-26-28	
		36mm	PM-26-36	
18.01-22.00mm	30mm 30.048-30.035mm	20mm	PM-30-20	
		36mm	PM-30-36	
		45mm	PM-30-45	
22.01-26.00mm	35mm 35.059-35.043mm	20mm	PM-35-20	
		36mm	PM-35-36	
		45mm	PM-35-45	
26.01-30.00mm	42mm 42.059-42.043mm	25mm	PM-42-25	
		45mm	PM-42-45	
		56mm	PM-42-56	
30.01-35.00mm	48mm 48.059-48.043mm	25mm	PM-48-25	
		45mm	PM-48-45	
		56mm	PM-48-56	
35.01-42.00mm	55mm 55.072-55.053mm	30mm	PM-55-30	
		56mm	PM-55-56	
		67mm	PM-55-67	
42.01-48.00mm	62mm 62.072-62.053mm	30mm	PM-62-30	
		56mm	PM-62-56	
		67mm	PM-62-67	

ID RANGE (G6)	OD (s6)	LENGTH	ANSI PART NO.	PRICE 1-5
48.01-55.00mm	70mm 70.078-70.059mm	30mm	PM-70-30	Please see our web catalog for pricing.
		56mm	PM-70-56	
		67mm	PM-70-67	
55.01-63.00mm	78mm 78.078-78.059mm	35mm	PM-78-35	
		67mm	PM-78-67	
		78mm	PM-78-78	
63.01-70.00mm	85mm 85.093-85.071mm	35mm	PM-85-35	
		67mm	PM-85-67	
		78mm	PM-85-78	
70.01-78.00mm	95mm 95.093-95.071mm	40mm	PM-95-40	
		78mm	PM-95-78	
		105mm	PM-95-105	
78.01-85.00mm	105mm 105.101-105.079mm	40mm	PM-105-40	
		78mm	PM-105-78	
		105mm	PM-105-105	
85.01-95.00mm	115mm 115.101-115.079mm	45mm	PM-115-45	
		89mm	PM-115-89	
		112mm	PM-115-112	
95.01-105.00mm	125mm 125.117-125.092mm	45mm	PM-125-45	
		89mm	PM-125-89	
		112mm	PM-125-112	

* Small metric drill sizes through .80mm are counterbored 1.00mm diameter, with 3mm drill-bearing length.

QUANTITY DISCOUNTS

Quantity	1	6	12	24	50	100	200	500
	-5	-11	-23	-49	-99	-199	-499	Up
Discount %	Net	18%	29%	34%	42%	48%	50%	52%
Multiplier	1.00	.82	.71	.66	.58	.52	.50	.48