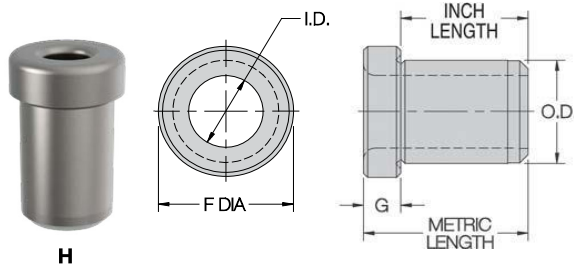


HEAD PRESS FIT BUSHINGS



ORDERING EXAMPLES:

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

Standard prices apply only to bushings with a standard-drill-size ID within 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.

INCH

BODY OD	F DIA	G
5/32	1/4	3/32
13/64	19/64	3/32
1/4	23/64	3/32
5/16	27/64	1/8
3/8	1/2	3/32
13/32	1/2	5/32
7/16	9/16	3/32
1/2	39/64	7/32
9/16	11/16	3/32
5/8	51/64	7/32
3/4	59/64	7/32
7/8	1-7/64	1/4
1	1-15/64	5/16
1-1/4	1-1/2	1/4
1-3/8	1-39/64	3/8
1-3/4	1-63/64	3/8
2-1/4	2-31/64	3/8

METRIC

BODY OD	F DIA	G
4mm	7mm	2m
5mm	8mm	2m
6mm	9mm	2.5m
7mm	10mm	2.5m
8mm	11mm	2.5m
10mm	13mm	3m
12mm	15mm	3m
15mm	18mm	3m
18mm	22mm	4m
22mm	26mm	4m
26mm	30mm	4m
30mm	34mm	5m
35mm	39mm	5m
42mm	46mm	5m
48mm	52mm	5m
55mm	59mm	5m
62mm	66mm	6m
70mm	74mm	6m
78mm	82mm	6mm
85mm	90mm	6mm
95mm	100mm	6mm

STANDARD ID TOLERANCES:

From #80 to 1/4"	+0.001/+0.004	From .35 to 3mm	+0.002/+0.008mm
Over 1/4 to 3/4"	+0.001/+0.005	Over 3 to 6mm	+0.004/+0.012mm
Over 3/4 to 1-1/2"	+0.002/+0.006	Over 6 to 10mm	+0.005/+0.014mm
Over 1-1/2 to 2-3/4"	+0.003/+0.007	Over 10 to 18mm	+0.006/+0.017mm
		Over 18 to 30mm	+0.007/+0.020mm
		Over 30 to 50mm	+0.009/+0.025mm
		Over 50 to 80mm	+0.010/+0.029mm
		Over 80 to 120mm	+0.012/+0.034mm (G6 tolerance)

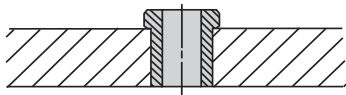
REAMER ID TOLERANCES:

From #60 a 1/4"	+0.0005/+0.0008	From 1 to 3mm	+0.006/+0.012mm
Over 1/4 to 1"	+0.0006/+0.0010	Over 3 to 6mm	+0.010/+0.018mm
Over 1 to 1-1/2"	+0.0008/+0.0012	Over 6 to 10mm	+0.013/+0.022mm
		Over 10 to 18mm	+0.016/+0.027mm
		Over 18 to 30mm	+0.020/+0.033mm (F6 tolerance)

APPLICATIONS:

Similar to a P bushing, but with a head to resist heavy axial loads. H bushings are permanently pressed into the jig plate. They are generally used for single-step drilling or reaming operations when you do not expect to replace bushings during the tooling's lifetime. The head can be left exposed, or recessed by counterboring the installation hole.

The "length" listed for an inch head-press-fit bushing refers length under the head, while the metric version's "length" is overall length.



ID RANGE	OD	LENGTH	ANSI PART NO.
.0135-.0291 #80-#70 .35-.70mm	5/32 .1578-.1575 (.166-.161 UNG)	1/4	H-10-4
		5/16	H-10-5
		*3/8	H-10-6
		*1/2	H-10-8
.0292-.0519 #69-3/64 .75-1.25mm		1/4	H-10-4
		5/16	H-10-5
		*3/8	H-10-6
		*1/2	H-10-8
.0520-.0625 #55-1/16 1.30-1.60mm		*3/4	H-10-12
		1/4	H-10-4
		5/16	H-10-5
		3/8	H-10-6
	*1/2	H-10-8	
	*3/4	H-10-12	

* **INFO++:** Counterbored, leaving correct drill-bearing length and clearance.

CONTINUED ON NEXT PAGE

HEAD PRESS FIT BUSHINGS

ID RANGE	OD	LENGTH	ANSI PART NO.
.0135-.0291 #80-#70 .35-.70mm	13/64 .2046-.2043 (.213-.208 UNG)	1/4	H-13-4
		5/16	H-13-5
		*3/8	H-13-6
		*1/2	H-13-8
1/4		H-13-4	
5/16		H-13-5	
*3/8		H-13-6	
*1/2		H-13-8	
*3/4		H-13-12	
1/4		H-13-4	
5/16		H-13-5	
3/8		H-13-6	
*1/2		H-13-8	
*3/4		H-13-12	
*1		H-13-16	
1/4		H-13-4	
5/16		H-13-5	
3/8		H-13-6	
*1/2		H-13-8	
*3/4		H-13-12	
*1		H-13-16	
.0980-.1406 #40-9/64 2.50-3.50mm		1/4	H-16-4
		5/16	H-16-5
		3/8	H-16-6
	*1/2	H-16-8	
	*5/8	H-16-10	
	*3/4	H-16-12	
	*1	H-16-16	
	*1-3/8	H-16-22	
*1-1/2	H-16-24		
.1250-.1935 1/8-#10 3.20-4.90mm	5/16 .3141-.3138 (.327-.322 UNG)	1/4	H-20-4
		5/16	H-20-5
		3/8	H-20-6
		1/2	H-20-8
		5/8	H-20-10
		3/4	H-20-12
		*1	H-20-16
		*1-3/8	H-20-22
*1-1/2	H-20-24		
.1935-.2280 #10-#1 4.90-5.80mm	3/8 .3766-.3763 (.390-.385 UNG)	1/4	H-24-4
		5/16	H-24-5
		3/8	H-24-6
		1/2	H-24-8
		5/8	H-24-10
		3/4	H-24-12
*1	H-24-16		
.1875-.2570 3/16-F 4.75-6.50mm	13/32 .4078-.4075 (.421-.416 UNG)	1/4	H-26-4
		5/16	H-26-5
		3/8	H-26-6
		1/2	H-26-8
		3/4	H-26-12
		*1	H-26-16
		*1-3/8	H-26-22
		*1-1/2	H-26-24
		*1-3/4	H-26-28

* **INFO+**: Counterbored, leaving correct drill-bearing length and clearance (see page 502 for bearing length).

ID RANGE	OD	LENGTH	ANSI PART NO.
.2340-.2900 A-L 5.90-7.40mm	7/16 .4392-.4389 (.453-.448 UNG)	1/4	H-28-4
		5/16	H-28-5
		3/8	H-28-6
		1/2	H-28-8
.1875-.3160 3/16-O 4.75-8.00mm	1/2 .5017-.5014 (.520-.515 UNG)	5/8	H-28-10
		3/4	H-28-12
		*1	H-28-16
		1/4	H-32-4
.2950-.3438 M-11/32 7.50-8.75mm	9/16 .5642-.5639 (.582-.577 UNG)	5/16	H-32-5
		3/8	H-32-6
		1/2	H-32-8
		3/4	H-32-12
.3125-.4375 5/16-7/16 7.90-11.00mm	5/8 .6267-.6264 (.645-.640 UNG)	*1	H-32-16
		*1-3/8	H-32-22
		*1-1/2	H-32-24
		*1-3/4	H-32-28
.2950-.3438 M-11/32 7.50-8.75mm	9/16 .5642-.5639 (.582-.577 UNG)	1/4	H-36-4
		5/16	H-36-5
		3/8	H-36-6
		1/2	H-36-8
.3125-.4375 5/16-7/16 7.90-11.00mm	5/8 .6267-.6264 (.645-.640 UNG)	5/8	H-36-10
		3/4	H-36-12
		1	H-36-16
		1/4	H-40-4
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	5/16	H-40-5
		3/8	H-40-6
		1/2	H-40-8
		5/8	H-40-10
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	3/4	H-40-12
		1	H-40-16
		1-3/8	H-40-22
		1-1/2	H-40-24
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	1-3/4	H-40-28
		2-1/8	H-40-34
		1/4	H-48-4
		5/16	H-48-5
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	3/8	H-48-6
		1/2	H-48-8
		5/8	H-48-10
		3/4	H-48-12
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	1	H-48-16
		1-1/4	H-48-20
		1-3/8	H-48-22
		1-1/2	H-48-24
.3125-.5312 5/16-17/32 7.90-13.50mm	3/4 .7518-.7515 (.770-.765 UNG)	1-3/4	H-48-28
		2-1/8	H-48-34

CONTINUED ON NEXT PAGE

HEAD PRESS FIT BUSHINGS

ID RANGE	OD	LENGTH	ANSI PART NO.
.5000-.6562 1/2-21/32 12.50-16.50mm	7/8 .8768-.8765 (.895-.890 UNG)	1/2	H-56-8
		5/8	H-56-10
		3/4	H-56-12
		1	H-56-16
		1-1/4	H-56-20
		1-3/8	H-56-22
		1-1/2	H-56-24
		1-3/4	H-56-28
		2-1/8	H-56-34
		2-1/2	H-56-40
.5000-.7656 1/2-49/64 12.50-19.50mm	1 1.0018-1.0015 (1.020-1.015 UNG)	1/2	H-64-8
		3/4	H-64-12
		1	H-64-16
		1-3/8	H-64-22
		1-1/2	H-64-24
		1-3/4	H-64-28
		2-1/8	H-64-34
		2-1/2	H-64-40
		3	H-64-48
		5/8	H-80-10
.8594-.9375 55/64-15/16 22.00-24.00mm	1-1/4 1.2520-1.2517 (1.270-1.265 UNG)	3/4	H-80-12
		1	H-80-16
		1-1/4	H-80-20
		1-1/2	H-80-24
		1-3/4	H-80-28
		2	H-80-32
		1/2	H-88-8
.6250-1.0312 5/8-1-1/32 16.00-26.00mm	1-3/8 1.3772-1.3768 (1.395-1.390 UNG)	3/4	H-88-12
		1	H-88-16
		1-3/8	H-88-22
		1-1/2	H-88-24
		1-3/4	H-88-28
		2-1/8	H-88-34
		2-1/2	H-88-40
		3	H-88-48
		3/4	H-112-12
1.0000-1.3906 1-1-25/64 26.00-35.00mm	1-3/4 1.7523-1.7519 (1.770-1.765 UNG)	1	H-112-16
		1-3/8	H-112-22
		1-1/2	H-112-24
		1-3/4	H-112-28
		2-1/8	H-112-34
		2-1/2	H-112-40
		3	H-112-48
		1	H-144-16
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)	1-3/8	H-144-22
		1-1/2	H-144-24
		1-3/4	H-144-28
		2-1/8	H-144-34
		2-1/2	H-144-40
		3	H-144-48

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

HEAD PRESS FIT BUSHINGS – CARBIDE



HC

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

Note: Due to manufacturing requirements, head dimensions of some carbide bushings may differ slightly from ANSI standards. Most carbide bushings have steel heads.

ID RANGE	OD	LENGTH	ANSI PART NO.
.5000-.7500 1/2-3/4 13.00-19.00mm	1 1.0018-1.0015	1/2	HC-64-8
		3/4	HC-64-12
		1	HC-64-16
		1-3/8	HC-64-22
		1-3/4	HC-64-28
.7500-1.0000 3/4-1 19.50-25.00mm	1-3/8 1.3772-1.3768	3/4	HC-88-12
		1	HC-88-16
		1-3/8	HC-88-22
		1-3/4	HC-88-28
		2-1/8	HC-88-34
1.0000-1.3750 1-1-3/8 26.00-34.00mm	1-3/4 1.7523-1.7519	2-1/2	HC-88-40
		1	HC-112-16
		1-3/8	HC-112-22
		1-3/4	HC-112-28
		2	HC-112-32
		2-1/8	HC-112-34
		2-1/2	HC-112-40
1.3750-1.7500 1-3/8-1-3/4 35.00-44.00mm	2-1/4 2.2525-2.2521	3	HC-112-48
		1	HC-144-16
		1-3/8	HC-144-22
		1-3/4	HC-144-28
		2-1/8	HC-144-34
		2-1/2	HC-144-40
		3	HC-144-48

HEAD PRESS FIT BUSHINGS – METRIC



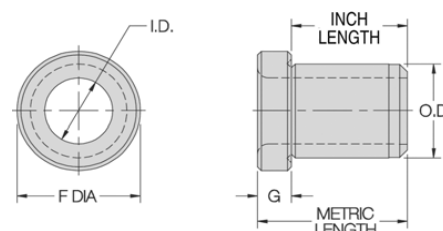
HM

ID RANGE (G6)	OD (s6)	LENGTH	ANSI PART NO.
.35-1.00mm	4mm 4.027-4.019mm	*6mm	HM-4-6
		*9mm	HM-4-9
		6mm	HM-4-6
1.01-1.80mm	5mm 5.027-5.019mm	9mm	HM-4-9
		6mm	HM-5-6
1.81-2.60mm	6mm 6.027-6.019mm	9mm	HM-5-9
		8mm	HM-6-8
2.61-3.30mm	7mm 7.032-7.023mm	12mm	HM-6-12
		16mm	HM-6-16
		8mm	HM-7-8
3.31-4.00mm	8mm 8.032-8.023mm	12mm	HM-7-12
		16mm	HM-7-16
		8mm	HM-8-8
4.01-5.00mm	10mm 10.032-10.023mm	12mm	HM-8-12
		16mm	HM-8-16
		10mm	HM-10-10
5.01-6.00mm	12mm 12.032-12.028mm	16mm	HM-10-16
		20mm	HM-10-20
		10mm	HM-12-10
6.01-8.00mm	15mm 15.032-15.028mm	16mm	HM-12-16
		20mm	HM-12-20
		12mm	HM-15-12
8.01-10.00mm	18mm 18.032-18.028mm	20mm	HM-15-20
		25mm	HM-15-25
		12mm	HM-18-12
10.01-12.00mm	22mm 22.048-22.035mm	20mm	HM-18-20
		25mm	HM-18-25
		16mm	HM-22-16
12.01-15.00mm	26mm 26.048-26.035mm	28mm	HM-22-28
		36mm	HM-22-36
		16mm	HM-26-16
15.01-18.00mm	30mm 30.048-30.035mm	28mm	HM-26-28
		36mm	HM-26-36
		20mm	HM-30-20
18.01-22.00mm	35mm 35.059-35.043mm	36mm	HM-30-36
		45mm	HM-30-45
		20mm	HM-35-20
22.01-26.00mm	42mm 42.059-42.043mm	36mm	HM-35-36
		45mm	HM-35-45
		25mm	HM-42-25
26.01-30.00mm	48mm 48.059-48.043mm	45mm	HM-42-45
		56mm	HM-42-56
		25mm	HM-48-25
30.01-35.00mm	55mm 55.072-55.053mm	45mm	HM-48-45
		56mm	HM-48-56
		30mm	HM-55-30
35.01-42.00mm	62mm 62.072-62.053mm	56mm	HM-55-56
		67mm	HM-55-67
		30mm	HM-62-30
42.01-48.00mm		56mm	HM-62-56
		67mm	HM-62-67

* **INFO+:** Counterbored, leaving correct drill-bearing length and clearance (see page 502 for bearing length).

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

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



Note: The "length" listed on this page for a metric head-press-fit bushing refers to its overall length, while the inch version's "length" is its length under the head.