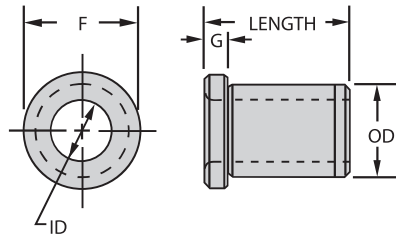


HEAD LINER BUSHINGS



HL



INCH

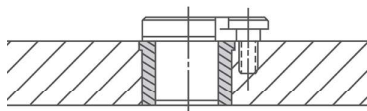
BODY OD	F DIA	G
1/2	5/8	3/32
3/4	7/8	3/32
1	1-1/8	1/8
1-3/8	1-1/2	1/8
1-3/4	1-7/8	3/16
2-1/4	2-3/8	3/16
2-3/4	2-7/8	3/16

METRIC

BODY OD	F DIA	G
12mm	15mm	3mm
15mm	18mm	3mm
18mm	22mm	4mm
22mm	26mm	4mm
26mm	30mm	4mm
30mm	34mm	5mm
35mm	39mm	5mm
42mm	46mm	5mm
48mm	52mm	5mm
55mm	59mm	5mm
62mm	66mm	6mm
70mm	74mm	6mm
78mm	82mm	6mm
85mm	90mm	6mm
95mm	100mm	6mm
105mm	110mm	6mm
115mm	120mm	6mm
125mm	130mm	6mm

APPLICATIONS:

Similar to an L bushing, but with a head to resist heavy axial loads. Head liners are permanent bushings used to hold renewable drill bushings. The head liner's ID has a precise sliding fit with the renewable bushing's OD. The hardened head liner accurately locates the renewable bushing and protects the jig plate from wear caused by frequent bushing replacement. Note: The "length" listed for a head liner refers to its overall length, not its length under the head. Metric head-liner bushings are the same as metric head-press-fit bushings.



ORDERING EXAMPLES:

HL-32-16	Standard inch liner bushing
HL-32-16U	Unground OD
HM-18-25-12.00	Standard metric liner bushing (same as metric press-fit type)

STANDARD LINER ID TOLERANCES:

5/16"	+0.001/+0.004	8 to 10mm	+0.005/+0.014mm
1/2"	+0.002/+0.005	12 to 18mm	+0.006/+0.017mm
3/4"	+0.003/+0.006	22 to 30mm	+0.007/+0.020mm
1"	+0.004/+0.007	35 to 48mm	+0.009/+0.025mm
1-3/8"	+0.006/+0.010	55 to 78mm	+0.010/+0.029mm
1-3/4"	+0.008/+0.012	85 to 105mm	+0.012/+0.034mm
2-1/4"	+0.010/+0.015		(G6 tolerance)

ID RANGE	OD	LENGTH	ANSI PART NO.
5/16	1/2 .5017-.5014 (.520-.515 UNG)	5/16	HL-32-5
		3/8	HL-32-6
		1/2	HL-32-8
		3/4	HL-32-12
		1	HL-32-16
1/2	3/4 .7518-.7515 (.770-.765 UNG)	1-3/8	HL-32-22
		5/16	HL-48-5
		3/8	HL-48-6
		1/2	HL-48-8
		3/4	HL-48-12
		1	HL-48-16
		1-3/8	HL-48-22
3/4	1 1.0018-1.0015 (1.020-1.015 UNG)	1-1/2	HL-48-24
		1-3/4	HL-48-28
		2-1/8	HL-48-34
		1/2	HL-64-8
		3/4	HL-64-12
		1	HL-64-16
		1-3/8	HL-64-22
		1-1/2	HL-64-24
		1-3/4	HL-64-28
		2-1/8	HL-64-34
1	1-3/8 1.3772-1.3768 (1.395-1.390 UNG)	2-1/2	HL-64-40
		3	HL-64-48
		1/2	HL-88-8
		3/4	HL-88-12
		1	HL-88-16
		1-3/8	HL-88-22
		1-1/2	HL-88-24
		1-3/4	HL-88-28
		2-1/8	HL-88-34
		2-1/2	HL-88-40
1-3/8	1-3/4 1.7523-1.7519 (1.770-1.765 UNG)	3	HL-88-48
		3/4	HL-112-12
		1	HL-112-16
		1-3/8	HL-112-22
		1-1/2	HL-112-24
		1-3/4	HL-112-28
		2-1/8	HL-112-34
1-3/4	2-1/4 2.2525-2.2521 (2.270-2.265 UNG)	2-1/2	HL-112-40
		3	HL-112-48
		3/4	HL-144-12
		1	HL-144-16
		1-3/8	HL-144-22
		1-1/2	HL-144-24
		1-3/4	HL-144-28
2-1/4	2-3/4 2.7526-2.7522 (2.770-2.765 UNG)	2-1/8	HL-144-34
		2-1/2	HL-144-40
		3	HL-144-48
		3/4	HL-176-12
		1	HL-176-16
		1-3/8	HL-176-22
		1-1/2	HL-176-24
2-1/2		1-3/4	HL-176-28
		2-1/8	HL-176-34
		2-1/2	HL-176-40
		3	HL-176-48

HEAD LINER BUSHINGS – METRIC



HM

ID (G6)	OD (s6)	LENGTH	ANSI PART NO.
8mm	12mm 12.039-12.028mm	10mm	HM-12-10-8.00
		16mm	HM-12-16-8.00
10mm	15mm 15.039-15.028mm	12mm	HM-15-12-10.00
		20mm	HM-15-20-10.00
		25mm	HM-15-25-10.00
		12mm	HM-18-12-12.00
12mm	18mm 18.039-18.028mm	20mm	HM-18-20-12.00
		25mm	HM-18-25-12.00
15mm	22mm 22.048-22.035mm	16mm	HM-22-16-15.00
		28mm	HM-22-28-15.00
		36mm	HM-22-36-15.00
		16mm	HM-26-16-18.00
18mm	26mm 26.048-26.035mm	28mm	HM-26-28-18.00
		36mm	HM-26-36-18.00
		20mm	HM-30-20-22.00
22mm	30mm 30.048-30.035mm	36mm	HM-30-36-22.00
		45mm	HM-30-45-22.00
		20mm	HM-35-20-26.00
26mm	35mm 35.059-35.043mm	36mm	HM-35-36-26.00
		45mm	HM-35-45-26.00
		25mm	HM-42-25-30.00
30mm	42mm 42.059-42.043mm	45mm	HM-42-45-30.00
		56mm	HM-42-56-30.00
		25mm	HM-48-25-35.00
35mm	48mm 48.059-48.043mm	45mm	HM-48-45-35.00
		56mm	HM-48-56-35.00
		30mm	HM-55-30-42.00
42mm	55mm 55.072-55.053mm	56mm	HM-55-56-42.00
		67mm	HM-55-67-42.00
		30mm	HM-62-30-48.00
48mm	62mm 62.072-62.053mm	56mm	HM-62-56-48.00
		67mm	HM-62-67-48.00
		30mm	HM-70-30-55.00
55mm	70mm 70.078-70.059mm	56mm	HM-70-56-55.00
		67mm	HM-70-67-55.00
		35mm	HM-78-35-62.00
62mm	78mm 78.078-78.059mm	67mm	HM-78-67-62.00
		78mm	HM-78-78-62.00

ID (G6)	OD (s6)	LENGTH	ANSI PART NO.
70mm	85mm 85.093-85.071mm	35mm	HM-85-35-70.00
		67mm	HM-85-67-70.00
		78mm	HM-85-78-70.00
78mm	95mm 95.093-95.071mm	40mm	HM-95-40-78.00
		78mm	HM-95-78-78.00
		105mm	HM-95-105-78.00
85mm	105mm 105.101-105.079mm	40mm	HM-105-40-85.00
		78mm	HM-105-78-85.00
		105mm	HM-105-105-85.00
95mm	115mm 115.101-115.079mm	45mm	HM-115-45-95.00
		89mm	HM-115-89-95.00
		112mm	HM-115-112-95.00
105mm	125mm 125.117-125.092mm	45mm	HM-125-45-105.00
		89mm	HM-125-89-105.00
		112mm	HM-125-112-105.00

Note: Metric head-liner bushings are the same as metric head-press-fit bushings.