

Material	Tensile Strength	Hardness	Reamer Diameter	Depth of Cut		Surface Speed m/min		Feed mm/rev		Coolant
	N/mm ²	Brinell		HSS/TiN	Carbide	HSS/TiN	Carbide	HSS/TiN	Carbide	
Steels	- 700		- 5	- 0.10	- 0.10			- 0.15	- 0.15	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	10	10	- 0.15	0.15 - 0.25	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.15 - 0.20	0.25 - 0.40	
			20 - 30	0.30 - 0.40	0.15 - 0.20	13	15	0.20 - 0.40	0.40 - 0.60	
Steels	700 - 1000		- 5	- 0.10	- 0.10			- 0.10	- 0.10	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	7	8	- 0.10	0.10 - 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.40	
			20 - 30	0.30 - 0.40	0.15 - 0.20	10	12	0.20 - 0.30	0.40 - 0.50	
Steels	1000		- 5	- 0.10	- 0.10			- 0.10	- 0.10	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	3	6	- 0.10	0.10 - 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.15	0.20 - 0.30	
			20 - 30	0.30 - 0.40	0.15 - 0.20	5	10	0.15 - 0.20	0.30 - 0.40	
Stainless steels			- 5	- 0.10	- 0.10			- 0.10	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	3	8	- 0.10	- 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.30	
			20 - 30	0.30 - 0.40	0.15 - 0.20	5	15	0.20 - 0.30	0.30 - 0.50	
Cast steel	400 - 500		- 5	- 0.10	- 0.10			- 0.10	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	6	8	- 0.10	- 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.30	
			20 - 30	0.30 - 0.40	0.15 - 0.20	10	12	0.20 - 0.30	0.30 - 0.50	
Cast steel	500 - 700		- 5	- 0.10	- 0.10			- 0.10	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	5	6	- 0.10	- 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.15	0.15 - 0.25	
			20 - 30	0.30 - 0.40	0.15 - 0.20	8	10	0.15 - 0.20	0.25 - 0.35	
Cast iron		- 220 HB	- 5	- 0.10	- 0.10			- 0.20	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	7	8	0.20 - 0.30	0.20 - 0.30	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.30 - 0.40	0.30 - 0.40	
			20 - 30	0.30 - 0.40	0.15 - 0.20	10	12	0.40 - 0.50	0.40 - 0.60	
Cast iron		220 HB +	- 5	- 0.10	- 0.10			- 0.10	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	4	6	- 0.10	- 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.35	
			20 - 30	0.30 - 0.40	0.15 - 0.20	6	10	0.20 - 0.30	0.35 - 0.50	
SG cast iron			- 5	- 0.10	- 0.10			- 0.10	- 0.20	Soluble or cutting oil or dry
			5 - 10	0.10 - 0.20	- 0.10	7	8	- 0.10	- 0.20	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.30	
			20 - 30	0.30 - 0.40	0.15 - 0.20	10	12	0.20 - 0.30	0.30 - 0.50	
Copper			- 5	0.10 - 0.20	- 0.10			- 0.15	- 0.20	Soluble or cutting oil
			5 - 10	0.20 - 0.30	- 0.10	8	20	0.15 - 0.20	0.20 - 0.50	
			10 - 20	0.20 - 0.40	0.10 - 0.15	-	-	0.20 - 0.30	0.50 - 0.80	
			20 - 30	0.30 - 0.50	0.15 - 0.20	16	30	0.30 - 0.60	0.80 - 1.00	
Brass			- 5	- 0.10	- 0.10			- 0.15	- 0.20	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	10	10	0.15 - 0.25	0.20 - 0.30	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.25 - 0.30	0.30 - 0.50	
			20 - 30	0.30 - 0.40	0.15 - 0.20	20	20	0.30 - 0.40	0.50 - 0.70	
Cast bronze			- 5	- 0.10	- 0.10			- 0.20	- 0.15	Soluble or cutting oil
			5 - 10	0.10 - 0.20	- 0.10	10	12	0.20 - 0.30	0.15 - 0.30	
			10 - 20	0.20 - 0.30	0.10 - 0.15	-	-	0.30 - 0.40	0.30 - 0.40	
			20 - 30	0.30 - 0.40	0.15 - 0.20	20	25	0.40 - 0.50	0.40 - 0.60	
Aluminium alloys			- 5	0.10 - 0.20	- 0.10			- 0.10	- 0.15	Soluble oil or Paraffin
			5 - 10	0.20 - 0.30	- 0.10	15	15	- 0.10	0.15 - 0.20	
			10 - 20	0.20 - 0.40	0.10 - 0.15	-	-	0.10 - 0.20	0.20 - 0.40	
			20 - 30	0.30 - 0.50	0.15 - 0.20	30	30	0.20 - 0.30	0.40 - 0.60	
Plastics			- 5	0.10 - 0.20	- 0.10			- 0.20	- 0.30	Dry or air cooled
			5 - 10	0.20 - 0.30	- 0.10	4	10	0.20 - 0.30	0.30 - 0.50	
			10 - 20	0.20 - 0.40	0.10 - 0.15	-	-	0.30 - 0.40	0.50 - 0.80	
			20 - 30	0.30 - 0.50	0.15 - 0.20	10	30	0.40 - 0.50	0.60 - 1.00	

AcuRea = Multi-layer Chrome Nano coating

AcuRea reamers with high pressure coolant – increase surface speed by 100%

Floating Reamer Holder

(Linear bearings parallel to the axis)
(Supplied by RE-AL)



for Quality & Service

www.toolex.co.uk

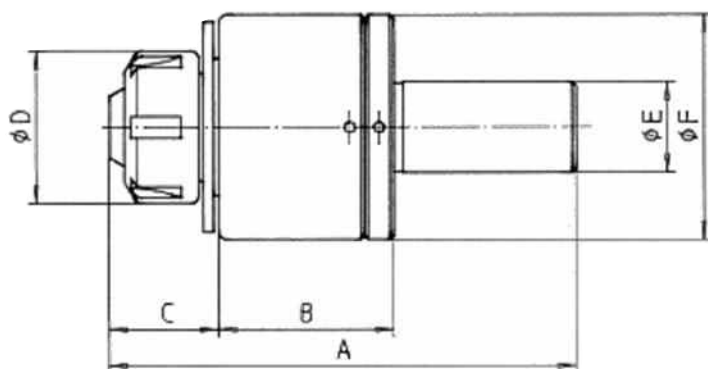
The ideal tool to increase productivity
and improve reamer life

Model	A	B	C	D	E	F	Price £
PHA-E9	90	34	16	13.5	10	19.05	594.00
MINI 9	50	34	16	13.5	-	19.05	594.00
PHA-E 12	97	32	20	19	12	31	594.00
PHA-E 12	100	32	20	19	16	31	594.00
PHA-E 12	102	32	20	19	20	31	594.00
PHA-E 16	85	35	20	35	16	50	594.00
PHA-E 16	85	35	20	35	20	50	594.00
PHA-E 16	105	35	20	35	25	50	594.00
PHA-E 20	85	35	20	35	16	50	594.00
PHA-E 20	85	35	20	35	20	50	594.00
PHA-E 20	105	35	20	35	25	50	594.00
PHA-E 20	105	35	20	35	1"	50	594.00
PHA-E 20	122	35	20	35	TS 1	50	594.00
PHA-E 20	137	35	20	35	TS 2	50	594.00
PHA-E 25	128	48	30	42	20	62	746.00
PHA-E 25	128	48	30	42	25	62	746.00
PHA-E 25	128	48	30	42	1"	62	746.00
PHA-E 25	160	48	30	42	TS 2	62	746.00
PHA-E 25	179	48	30	42	TS 3	62	746.00
PHA-E 32	143	55	38	50	20	78	983.00
PHA-E 32	173	55	38	50	40	78	983.00
PHA-E 32	173	55	38	50	1¼"	78	983.00
PHA-E 32	195	55	38	50	TS 3	78	983.00

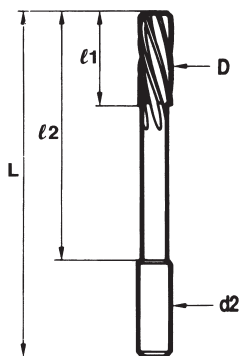
Part number PHA-E *

* = ER collet size

Supplied with Collet wrench and Collet nut



HSS E M35 Tolerance H4 0.01mm increments HSS E M35 AcuRea Tolerance ± 0.0015



D	D''	L	l1	l2	d2	Z	HSS E Price £	AcuRea Price £
0.60 - 0.79		40	15		1.2	4	16.35	22.05
0.80 - 0.85		40	15		1.2	4	16.35	22.05
0.86 - 1.05	1/32	40	15		1.2	4	15.25	20.60
1.06 - 1.32		40	15		1.2	4	14.35	19.60
1.33 - 1.50		40	15		1.5	4	14.35	19.60
1.51 - 1.70	1/16	50	20		2	4	14.35	19.60
1.71 - 2.05	5/64	50	20		2	4	14.35	19.60
2.06 - 2.12		50	20		2	4	13.05	18.35
2.13 - 2.65	3/32	50	20		2.5	4	13.05	18.35
2.66 - 2.90	7/64	61	20		2.5	6	13.05	18.35
2.91 - 3.05		61	20		3	6	13.05	18.35
3.06 - 3.35	1/8	65	20		3	6	13.05	20.30
3.36 - 3.55		70	25		3	6	13.05	20.30
3.56 - 3.75	9/64	70	25		4	6	13.05	20.30
3.76 - 4.05	5/32	75	25	43	4	6	13.05	20.30
4.06 - 4.25		75	25	43	4	6	13.60	23.45
4.26 - 4.55		80	28	48	4.5	6	13.60	23.45
4.56 - 4.75		80	28	48	4.5	6	13.60	23.45
4.76 - 5.05	3/16	86	28	52	5	6	13.60	23.45
5.06 - 5.30		86	28	52	5	6	14.20	23.90
5.31 - 5.55	7/32	93	32	57	5.5	6	14.20	23.90
5.56 - 6.05		93	32	57	5.5	6	14.20	23.90
6.06 - 6.70	1/4	101	32	63	6	6	16.25	27.65
6.71 - 7.05		109	32	69	7	6	16.25	27.65
7.06 - 7.55	9/32	109	32	69	7	6	17.80	29.50
7.56 - 8.05	5/16	117	33	75	8	6	17.80	29.50
8.06 - 8.50		117	33	75	8	6	18.40	31.70
8.51 - 9.05		125	36	83	9	6	18.40	31.70
9.06 - 9.50		125	36	83	9	6	20.40	33.65
9.51 - 10.05	3/8	133	38	89	10	6	20.40	33.65
10.06 - 10.60		133	38	89	10	6	22.35	37.65
10.61 - 11.05	7/16	142	41	98	10	6	22.35	37.65
11.06 - 11.80		142	44	98	10	6	23.75	39.05
11.81 - 12.05		151	44	107	10	6	23.75	39.05
12.06 - 13.20	1/2	151	44	107	10	6	27.20	44.25

AcuRea = Multi-layer Chrome Nano coating

Reamers

Centre Drills & Spotting Drills

Countersinks & Counterbores

Slot Drills & End Mills

Taps & Dies

TUSA Carbide Tooling

Straight Shank Reamers

DIN 212-B (Supplied by Magafor)

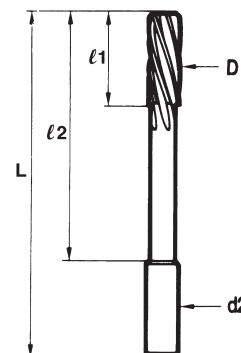
Tolerance H4 0.01mm increments
HSS E M35 (5%) Cob



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D	L	ℓ1	ℓ2	d2	Z	Price £
0.70 - 0.79	33	7	10	D	4	23.10
0.80 - 1.05	33	12	14	D	4	20.00
1.06 - 1.44	40	15	24	D	6	19.40
1.45 - 1.79	43	18	26	D	6	18.60
1.80 - 2.36	49	19	31	D	6	16.80
2.37 - 3.75	57	20	38	D	6	15.55
3.76 - 4.25	75	24	51	4	6	15.95
4.26 - 4.75	80	25	55	4.5	6	16.65
4.76 - 5.30	86	26	60	5	6	17.10
5.31 - 5.80	93	27	66	5.5	6	18.25
5.81 - 6.70	101	28	73	6	6	18.60
6.71 - 7.55	109	31	80	7	6	20.90
7.56 - 8.55	117	33	86	8	6	21.65
8.56 - 9.55	125	36	91	9	6	22.05
9.56 - 11.30	133	38	99	10	6	26.60
11.31 - 12.50	151	44	106	12	6	34.75
12.51 - 13.20	151	44	106	12	6	34.75



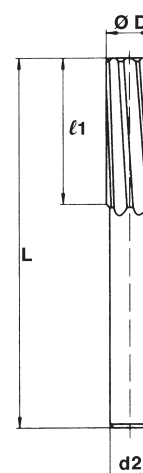
Straight Shank Stub Reamers

DIN 8089 (Manufactured by Toolex)

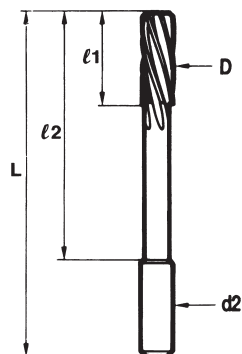
Tolerance H4 0.01mm increments

HSS E M35 (5%) Cob

D	L	ℓ1	d2	Z	Price £
3.76 - 4.25	56	20	3	6	15.00
4.26 - 5.20	63	22	4	6	16.05
5.21 - 5.30	63	22	4	6	18.70
5.31 - 6.70	63	22	5	6	18.70
6.71 - 7.25	71	25	6	6	19.40
7.26 - 8.20	71	25	6	6	20.50
8.21 - 8.50	71	25	6	6	22.10
8.51 - 9.25	71	25	8	6	23.50
9.26 - 10.20	71	25	8	6	26.00
10.21 - 10.60	71	25	8	6	29.20
10.61 - 11.25	80	28	10	6	29.75
11.26 - 12.05	80	28	10	6	32.60
12.06 - 13.20	80	28	10	6	34.00
13.21 - 14.05	90	32	12	6	37.80
14.06 - 15.05	90	32	12	6	38.45
15.06 - 16.05	90	32	12	6	40.40
16.06 - 17.05	90	32	12	6	48.20
17.06 - 18.05	100	36	16	6	49.65
18.06 - 19.05	100	36	16	6	51.25
19.06 - 20.05	100	36	16	6	52.65



Tolerance H7
HSS E M35 (5%) Cob



D	L	ℓ1	ℓ2	d2	Z	Price £
1.00	40	8	10	1.0	4	13.85
1.50	40	8	15	1.5	4	11.45
2.00	49	11	20	2.0	4	11.45
2.50	57	14	25	2.5	4	11.60
3.00	61	15	25	3.0	4	10.45
3.50	70	18	30	3.5	4	11.80
4.00	75	19	40	4.0	6	11.25
4.50	80	21	45	4.5	6	11.95
5.00	86	23	50	5.0	6	11.45
5.50	93	26	55	6.0	6	12.95
6.00	93	26	55	6.0	6	12.50
7.00	109	31	65	7.0	6	14.55
8.00	117	33	70	8.0	6	15.55
9.00	125	36	80	9.0	6	18.40
10.00	133	38	85	10.0	6	20.30
11.00	142	41	95	10.0	6	22.30
12.00	151	44	100	12.0	6	23.70
14.00	160	47	110	12.0	8	30.95
16.00	170	52	120	12.0	8	34.90
18.00	182	56	130	14.0	8	40.85
20.00	195	60	135	16.0	8	44.75

(Manufactured by Toolex) Tolerance H5
HSS M2 Standard sizes

D	D"	L	ℓ1	ℓ2	d2	Price £
13.50, 14.00	17/32, 35/64	160	47	110	14.00	28.25
14.50, 15.00	9/16, 37/64	162	50	115	14.00	30.45
15.50, 16.00	19/32, 39/64, 5/8	170	52	115	16.00	30.45
16.50, 17.00	41/64, 21/32	175	54	120	16.00	30.70
17.50, 18.00	43/64, 11/16, 45/64	182	56	130	16.00	32.95
18.50, 19.00	23/32, 47/64	189	58	130	16.00	39.35
19.50, 20.00	3/4, 49/64, 25/32	195	60	150	16.00	40.70
21.00	51/64, 13/16	220	67	160	20.00	78.55
22.00	53/64, 27/32, 55/64	220	67	160	20.00	78.90
23.00	7/8, 57/64, 29/32	220	67	160	20.00	79.35
24.00	59/64, 15/16	220	67	160	20.00	79.75
25.00	61/64, 31/32, 63/64	260	75	180	25.00	80.60
26.00	1	260	77	180	25.00	85.00
27.00		260	77	180	25.00	86.00
28.00		260	77	190	25.00	90.60
29.00		260	77	190	25.00	91.85
30.00		260	77	190	25.00	93.35

Reamers

Centre Drills & Spotting Drills

Countersinks & Counterbores

Slot Drills & End Mills

Taps & Dies

TUSA Carbide Tooling

Straight Shank Reamers

DIN 212-B (Manufactured by Toolex)



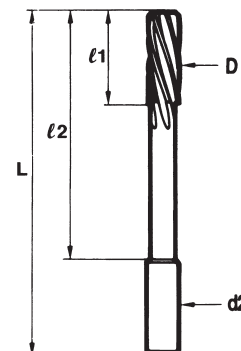
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Tolerance H5 0.01mm increments

HSS M2 Intermediate sizes

D	L	ℓ1	ℓ2	d2	Price £ 1	Price £ 2	Price £ 3+
13.21 - 13.99	160	47	110	14	42.65	38.90	34.00
14.01 - 14.25	160	47	110	14	45.95	41.85	36.60
14.26 - 14.99	162	50	115	14	45.95	41.85	36.60
15.01 - 15.25	162	50	115	14	49.65	45.25	39.60
15.26 - 15.99	170	52	115	16	49.65	45.25	39.60
16.01 - 16.25	170	52	115	16	50.90	46.40	40.55
16.26 - 16.99	175	54	120	16	50.90	46.40	40.55
17.01 - 17.25	175	54	120	16	53.30	48.60	41.90
17.26 - 17.99	182	56	130	16	53.30	48.60	41.90
18.01 - 18.25	182	56	130	16	57.25	52.10	45.55
18.26 - 18.99	189	58	130	16	57.25	52.10	45.55
19.01 - 19.25	189	58	130	16	59.35	54.10	48.60
19.26 - 19.99	195	60	150	16	59.35	54.10	48.60
20.01 - 20.25	195	60	150	16	86.60	78.90	-
20.26 - 21.99	220	67	160	20	86.60	78.90	-
22.01 - 23.99	220	67	160	20	87.10	79.30	-
24.01 - 24.25	220	67	160	20	88.50	80.60	-
24.26 - 24.99	260	77	180	25	88.50	80.60	-
25.01 - 25.99	260	77	180	25	93.00	85.00	-
26.01 - 26.99	260	77	180	25	94.10	86.00	-
27.01 - 27.99	260	77	180	25	99.15	90.60	-
28.01 - 28.99	260	77	190	25	100.60	91.90	-
29.01 - 29.99	260	77	190	25	102.15	93.35	-

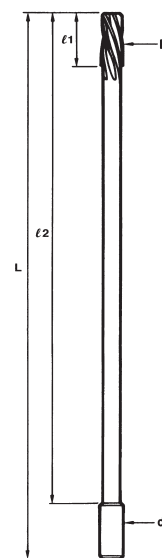


Straight Shank Reamers

Super Long (Supplied by Magafor)

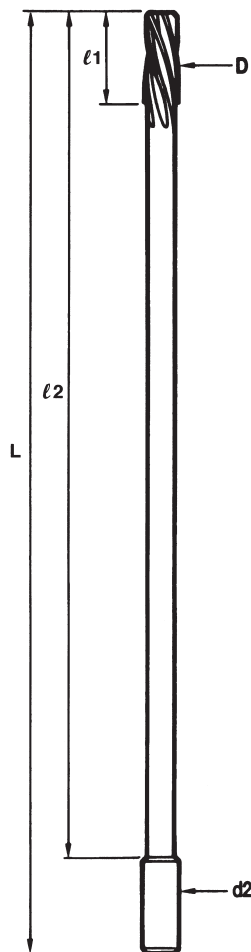
Tolerance H7 HSS M42 (8%) Cob

D	L	ℓ1	ℓ2	d2	Z	Price £
1.50	65	15	45	1.5	6	80.00
2.00	80	25	60	2.0	6	80.00
2.50	100	25	80	2.5	6	82.45
3.00	120	30	100	3.0	6	84.10
3.50	140	30	120	3.5	6	102.95
4.00	160	30	135	4.0	6	84.95
4.50	180	30	155	4.5	6	107.85
5.00	200	30	175	5.0	6	90.65
5.50	220	30	195	5.5	6	108.70
6.00	250	35	220	6.0	6	92.30
7.00	250	35	220	7.0	6	110.30
8.00	250	35	220	8.0	6	94.75
9.00	250	35	220	10.0	6	113.60
10.00	250	35	220	10.0	6	97.20



Tolerance H7

HSS M42 (8%) Cob and Carbide K15



D	L	l1	l2	d2	Z	Price £
1.50	55	12	35	1.5	6	57.10
2.00	65	14	45	2.0	6	51.35
2.50	75	14	55	2.5	6	51.35
3.00	90	14	70	3.0	6	39.90
3.50	90	14	70	3.5	6	58.30
4.00	105	16	80	4.0	6	39.90
4.50	105	16	80	4.5	6	60.35
5.00	115	16	90	5.0	6	41.95
5.50	115	16	90	5.5	6	64.05
6.00	130	16	100	6.0	6	43.55
6.35	130	16	100	6.0	6	66.50
6.50	130	16	100	6.0	6	66.50
7.00	140	18	110	7.0	6	46.85
7.50	140	18	110	7.0	6	68.15
8.00	160	18	130	8.0	6	45.20
8.50	160	18	130	8.0	6	68.95
9.00	175	18	140	9.0	6	51.35
9.50	175	18	140	9.0	6	71.40
10.00	190	20	150	10.0	6	51.35
11.00	200	20	160	10.0	6	58.70
12.00	210	20	160	12.0	6	56.25

Carbide Long Series K15

D	L	l1	l2	d2	Z	Price £
3.00	90	14	70	D	6	48.50
3.50	90	14	70	D	6	64.45
4.00	105	16	80	4.0	6	48.50
4.50	105	16	80	4.5	6	64.45
5.00	115	16	90	5.0	6	52.15
5.50	115	16	90	5.5	6	66.50
6.00	130	16	100	6.0	6	59.95
7.00	140	18	110	7.0	6	85.75
8.00	160	18	130	8.0	6	93.95
9.00	175	18	140	9.0	6	98.85
10.00	190	20	150	10.0	6	102.15
11.00	190	20	150	10.0	6	122.60
12.00	220	22	170	12.0	6	126.70
13.00	220	22	170	12.0	8	156.20
14.00	220	22	170	12.0	8	160.30
15.00	220	22	170	12.0	8	191.40
16.00	230	25	180	16.0	8	194.65
18.00	230	25	180	16.0	8	214.35
20.00	230	25	180	16.0	8	242.15

Reamers

Centre Drills & Spotting Drills

Countersinks & Counterbores

Slot Drills & End Mills

Taps & Dies

TUSA Carbide Tooling

Taper Shank Reamers

BS 328/4 (Manufactured by Toolex)



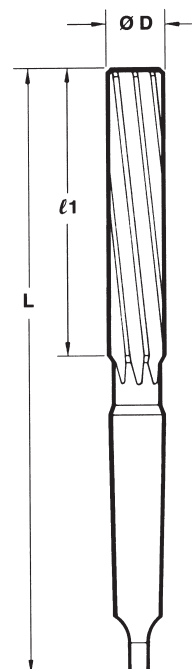
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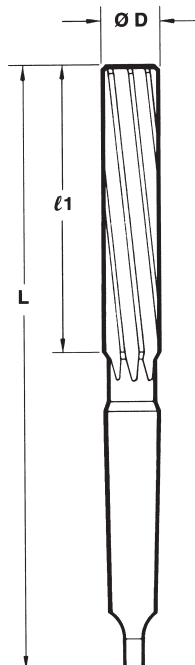
Tolerance H5

HSS M2 Standard sizes

D	D"	L	ℓ1	MTS	Price £
5.00		125	42	1	19.50
5.50		128	45	1	19.50
6.00	1/4	128	45	1	19.50
6.50	17/64	130	47	1	20.80
7.00	9/32	134	51	1	20.80
7.50	19/64	134	51	1	20.95
8.00	5/16	138	55	1	20.35
8.50	21/64	138	55	1	21.35
9.00	11/32	142	59	1	20.60
9.50	23/64, 3/8	146	63	1	22.00
10.00		146	63	1	20.95
10.50	25/64, 13/32, 27/64	146	63	1	23.40
11.00	7/16	151	68	1	22.60
11.50	29/64, 15/32	151	68	1	23.95
12.00		156	73	1	23.40
12.50	31/64	156	73	1	24.15
13.00	1/2	156	73	1	23.40
13.50	33/64, 17/32, 35/64	161	78	1	29.95
14.00	9/16	161	78	1	26.25
14.50	37/64	181	80	2	32.95
15.00	19/32	181	80	2	28.80
15.50	39/64	187	86	2	36.25
16.00	5/8	187	86	2	31.70
16.50	41/64, 21/32	187	86	2	39.50
17.00		187	86	2	34.75
17.50	43/64, 11/16, 45/64	193	92	2	41.10
18.00		193	92	2	36.00
18.50	23/32, 47/64	193	92	2	45.50
19.00	3/4	193	92	2	39.75
19.50	49/64, 25/32	200	99	2	50.35
20.00		200	99	2	44.00
20.50	51/64, 13/16	207	106	2	51.15
21.00		207	106	2	46.65
21.50	53/64, 27/32, 55/64	207	106	2	53.80
22.00	7/8	207	106	2	49.10
22.50	57/64	207	106	2	54.95
23.00		207	106	2	50.10
23.50	29/32, 59/64, 15/16	242	113	3	79.80
24.00		242	113	3	72.70



Tolerance H5 HSS M2 Standard sizes



D	D''	L	l1	MTS	Price £
24.50	61/64, 31/32, 63/64	242	113	3	79.70
25.00	1	242	113	3	72.55
25.50		242	113	3	84.75
26.00		242	113	3	77.50
26.50		251	122	3	88.20
27.00		251	122	3	85.15
27.50		251	122	3	90.60
28.00		251	122	3	88.65
28.50		251	122	3	101.15
29.00		251	122	3	92.45
29.50		251	122	3	103.25
30.00		251	122	3	113.60
31.00		260	131	4	124.20
32.00		293	134	4	125.25
33.00		293	134	4	135.35
34.00		302	143	4	144.40
35.00		302	143	4	147.50
36.00		302	143	4	165.70
37.00		302	143	4	174.70
38.00		312	153	4	178.75
39.00		312	153	4	193.95
40.00		312	153	4	196.95
41.00		312	153	4	211.05
42.00		312	153	4	219.20
43.00		312	164	4	265.70
44.00		323	164	4	267.65
45.00		323	164	4	268.80
46.00		323	164	4	281.55
47.00		323	164	4	294.30
48.00		334	175	4	302.85
49.00		334	175	4	307.05
50.00		334	175	4	311.35

Reamers

Centre Drills &
Spotting Drills

Countersinks
Counterbores

Slot Drills
End Mills

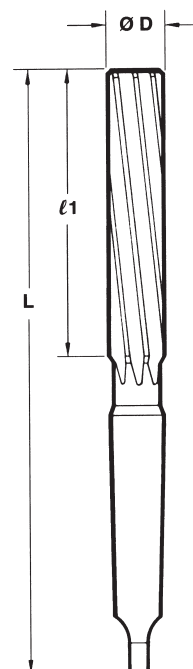
Taps
Dies

TUSA
Carbide Tooling

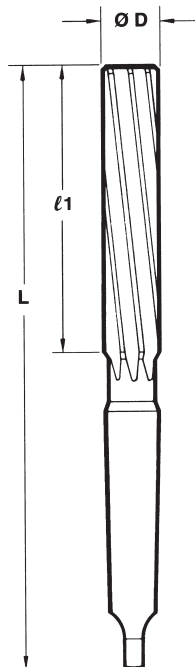
Tolerance H5 0.01mm increments

HSS M2 Intermediate sizes

D	L	ℓ1	ℓ2	MTS	Z	Price £	Price £	Price £
						1	2,3	4+
4.75 - 5.25	125	42	60	1	6	41.60	33.50	29.30
5.26 - 6.25	128	45	63	1	6	41.60	33.50	29.30
6.26 - 6.75	130	47	65	1	6	41.60	33.50	29.30
6.76 - 6.99	134	51	69	1	6	41.60	33.50	29.30
7.26 - 7.75	134	51	69	1	6	43.00	34.50	30.30
7.76 - 7.99	138	55	73	1	6	43.00	34.50	30.30
8.01 - 8.75	138	55	73	1	6	43.40	34.50	30.30
8.76 - 8.99	142	59	77	1	6	43.40	34.85	30.55
9.01 - 9.25	142	59	77	1	6	43.90	35.25	30.85
9.26 - 9.99	146	63	81	1	6	43.90	35.25	30.85
10.01 - 10.75	146	63	81	1	6	45.80	36.95	32.55
10.76 - 10.99	151	68	86	1	6	45.80	36.95	32.55
11.01 - 11.75	151	68	86	1	6	47.10	38.00	33.40
11.76 - 11.99	156	73	91	1	6	47.10	38.00	33.40
12.01 - 12.99	156	73	91	1	6	48.85	39.35	34.70
13.01 - 13.25	156	73	91	1	6	49.70	40.15	35.30
13.26 - 14.25	161	78	96	1	8	49.70	40.15	35.30
14.26 - 14.99	181	80	100	2	8	54.10	44.00	38.70
15.01 - 15.25	181	80	100	2	8	54.10	44.00	38.70
15.26 - 15.99	187	86	106	2	8	54.10	44.00	38.70
16.01 - 16.99	187	86	106	2	8	59.35	47.80	42.00
17.01 - 17.25	187	86	106	2	8	61.50	49.50	43.55
17.26 - 17.99	193	92	112	2	8	61.50	49.50	43.55
18.01 - 18.99	193	92	112	2	8	68.15	54.85	48.20
19.01 - 19.25	193	92	112	2	8	75.55	60.85	53.40
19.26 - 19.99	200	99	119	2	8	75.55	60.85	53.40
20.01 - 20.99	200	99	119	2	8	80.20	60.95	-
21.01 - 21.99	207	106	126	2	8	84.35	63.60	-
22.01 - 22.99	207	106	126	2	8	86.10	65.00	-
23.01 - 23.25	207	106	126	2	8	101.55	88.45	-
23.26 - 23.99	242	113	143	3	8	101.55	88.45	-
24.01 - 24.99	242	113	143	3	8	101.60	88.30	-
25.01 - 25.99	242	113	143	3	8	106.90	93.50	-
26.01 - 26.25	242	113	143	3	10	117.70	93.80	-



Tolerance H5 0.01mm increments
HSS M2 Intermediate sizes



D	L	ℓ1	ℓ2	MTS	Z	Price £ 1	Price £ 2,3
26.26 - 26.99	251	122	152	3	10	117.70	93.80
27.01 - 27.99	251	122	152	3	10	122.60	98.85
28.01 - 28.99	251	122	152	3	10	127.95	111.75
29.01 - 29.99	251	122	152	3	10	130.50	114.00
30.01 - 30.25	251	122	152	3	10	143.60	-
30.26 - 30.99	260	131	161	3	10	143.60	-
31.01 - 31.99	260	131	161	3	10	144.75	-
32.01 - 32.99	293	134	169	4	10	156.50	-
33.01 - 33.25	293	134	169	4	10	167.00	-
33.26 - 33.99	302	143	178	4	10	167.00	-
34.01 - 34.99	302	143	178	4	10	170.60	-
35.01 - 35.99	302	143	178	4	10	191.80	-
36.01 - 36.99	302	143	178	4	10	202.35	-
37.01 - 37.25	302	143	178	4	10	207.00	-
37.26 - 37.99	312	153	188	4	10	207.00	-
38.01 - 38.99	312	153	188	4	10	212.70	-
39.01 - 39.99	312	153	188	4	10	215.95	-
40.01 - 40.99	312	153	188	4	10	231.55	-
41.01 - 41.99	312	153	188	4	10	240.40	-
42.01 - 42.25	312	153	188	4	10	291.45	-
42.26 - 42.99	312	164	199	4	10	291.45	-
43.01 - 43.99	312	164	199	4	10	293.65	-
44.01 - 44.99	323	164	199	4	10	294.85	-
45.01 - 45.99	323	164	199	4	10	315.20	-
46.01 - 46.99	323	164	199	4	12	315.20	-
47.01 - 47.25	323	164	199	4	12	326.40	-
47.26 - 48.25	334	175	210	4	12	326.40	-
48.26 - 50.25	334	175	210	4	12	333.20	-

Reamers

Centre Drills &
Spotting Drills

Countersinks &
Counterbores

Slot Drills
End Mills

Taps
Dies

TUSA
Carbide Tooling

Taper Shank Reamers

Long Series (Manufactured by Toolex)

Tolerance H5 0.01mm increments

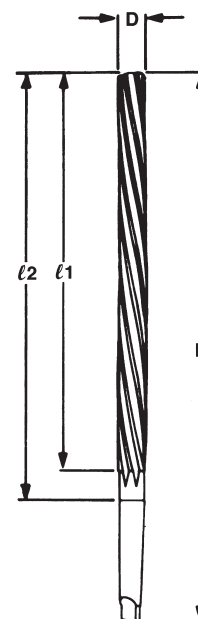
HSS M2

Size range D	ℓ1	ℓ2	MTS	Z	Price £
Overall length L=200mm					
5.26 - 6.25	110	135	1	6	60.50
6.26 - 7.25	110	135	1	6	61.20
7.26 - 8.25	110	135	1	6	61.70
Overall length L=250mm					
7.26 - 8.25	160	185	1	6	78.95
8.26 - 9.25	160	185	1	6	80.20
9.26 - 10.25	160	185	1	6	81.15
10.26 - 11.25	160	185	1	6	82.30
11.26 - 12.25	160	185	1	6	83.45
12.26 - 13.25	160	185	1	6	84.65
13.26 - 14.25	160	185	1	6	86.55
14.26 - 15.25	150	175	2	8	89.55
15.26 - 16.25	150	175	2	8	90.95
Overall length L = 300mm					
14.26 - 15.25	195	220	2	8	96.25
15.26 - 16.25	195	220	2	8	97.85
16.26 - 17.25	195	220	2	8	99.70
17.26 - 18.25	195	220	2	8	101.00
18.26 - 19.25	195	220	2	8	105.10
19.26 - 20.25	195	220	2	8	112.90
Overall length L = 380mm					
20.26 - 21.25	251	281	2	8	146.95
21.26 - 22.25	251	281	2	8	150.25
22.26 - 23.25	251	281	2	8	152.70
23.26 - 24.25	251	281	3	8	185.60
24.26 - 25.25	251	281	3	8	187.75
25.26 - 26.25	251	281	3	10	196.15
26.26 - 27.25	251	281	3	10	201.85
27.26 - 28.25	251	281	3	10	204.85
28.26 - 29.25	251	281	3	10	214.10
29.26 - 30.25	251	281	3	10	217.40
30.26 - 31.25	251	281	3	10	228.30
31.26 - 32.25	251	281	3	10	265.15



for Quality & Service

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0.200mm - 0.595mm available in .005mm increments

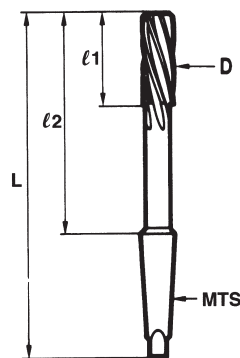
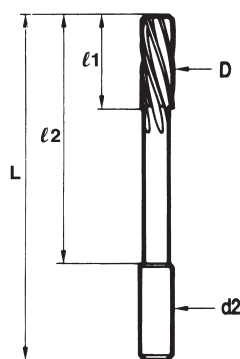
Tolerance \pm .001mm

0.6mm - 4.75mm available in .01mm increments

Tolerance H4

4.75mm - 32.25mm available in .01mm increments

Tolerance H5



REAMERS

Carbide Reamers
Straight Shank/Taper Shank
(Supplied by Magafor Manufactured by Toolex)

D	L	ℓ1	ℓ2	d2	Z	Price £
0.20 - 0.245	39	0.9	2	3	4	87.35
0.25 - 0.295	39	1.1	2.5	3	4	82.45
0.30 - 0.345	39	1.4	3	3	4	82.05
0.35 - 0.395	39	1.7	3.5	3	4	81.25
0.40 - 0.495	39	2	4	3	4	80.45
0.50 - 0.595	39	2.3	5	3	4	79.60
0.60 - 0.69	33	7	10	D	4	46.55
0.70 - 0.79	33	7	10	D	4	32.05
0.80 - 1.05	33	7	10	D	4	31.25
1.06 - 1.55	40	10	24	D	4	31.25
1.56 - 2.36	50	11	31	D	4	30.10
2.37 - 3.75	57	15	38	D	6	34.30
3.76 - 4.25	75	19	49	4	6	42.75
4.26 - 4.75	80	21	51	4.5	6	49.90
4.76 - 5.30	86	23	59	5	6	49.90
5.31 - 5.80	93	26	65	5.5	6	50.05
5.81 - 6.70	101	28	71	6	6	54.78
6.71 - 7.55	109	31	78	7	6	70.68
7.56 - 8.55	117	33	84	8	6	76.65
8.56 - 9.55	125	36	88	9	6	83.95
9.56 - 10.05	133	38	97	10	6	84.05
10.06 - 11.05	133	38	97	10	6	103.35
11.06 - 12.05	151	44	110	12	6	111.35
12.06 - 13.25	151	44	110	12	6	126.05
D	L	ℓ1	ℓ2	d2	Z	Price £
9.26 - 10.25	168	19	100	1	6	102.80
10.26 - 11.25	175	19	107	1	6	112.90
11.26 - 13.25	182	19	114	1	6	117.25
13.26 - 14.25	189	19	121	1	6	121.55
14.26 - 15.25	204	19	124	2	6	123.00
15.26 - 16.25	210	22	130	2	6	124.45
16.26 - 17.25	214	22	134	2	6	130.25
17.26 - 18.25	219	22	139	2	6	131.70
18.26 - 19.25	223	22	143	2	6	134.55
19.26 - 20.25	228	22	148	2	6	138.90
20.26 - 21.25	232	25	148	2	6	149.00
21.26 - 22.25	237	25	157	2	6	150.45
22.26 - 23.25	241	25	157	2	6	167.80
23.26 - 25.25	268	25	169	3	8	183.70
25.26 - 26.25	273	25	174	3	8	188.05
26.26 - 28.25	277	30	174	3	8	193.80
28.26 - 29.25	281	30	178	3	8	193.80
29.26 - 30.25	281	30	182	3	8	196.70
30.26 - 32.25	290	30	182	3	8	209.70

Reamers

Centre Drills & Spotting Drills

Countersinks & Counterbores

Slot Drills & End Mills

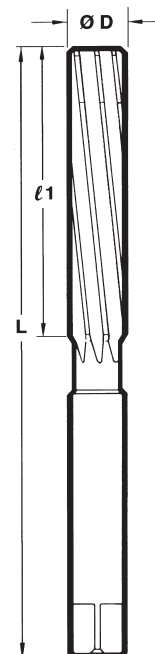
Taps & Dies

TUSA Carbide Tooling

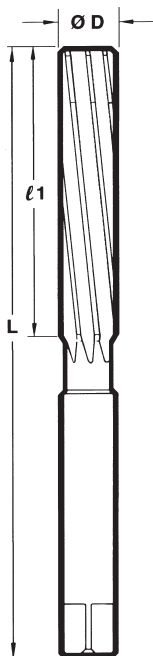
Tolerance H7

HSS M2 Standard sizes

D	L	ℓ1	Price £
1.00	38	14	23.75
1.50	44	21	21.60
2.00	50	25	17.65
2.50	57	29	17.55
3.00	57	31	17.40
3.50	71	35	17.65
4.00	76	38	18.10
4.50	81	41	18.95
5.00	87	44	18.60
5.50 & 6.00	93	47	20.35
6.50	100	50	21.90
7.00 & 7.50	107	54	21.90
8.00 & 8.50	115	58	21.90
9.00 & 9.50	124	62	25.50
10.00 & 10.50	133	66	26.40
11.00 & 11.50	142	71	31.70
12.00	152	76	31.70
12.50 & 13.00	152	76	38.80
13.50 & 14.00	163	81	38.80
14.50 & 15.00	163	81	45.85
15.50 & 16.00	175	87	46.75
16.50 & 17.00	175	87	55.95
17.50 & 18.00	188	93	55.95
18.50 & 19.00	188	93	65.35
19.50 & 20.00	201	100	65.35
21 & 22 & 23	215	107	72.45
24 & 25 & 26	231	115	90.15
27 & 28	247	124	118.45
29 & 30	247	124	130.90
31 & 32	265	133	153.90



Tolerance H5 0.01mm increments
HSS M2 Intermediate sizes



D	L	l1	Price £
4.25 - 4.49	81	41	22.20
4.50 - 4.99	87	44	22.20
5.00 - 5.49	93	47	22.20
5.50 - 5.99	93	47	22.20
6.00 - 6.49	93	50	25.00
6.50 - 6.99	107	54	25.00
7.00 - 7.49	107	54	25.00
7.50 - 7.99	115	58	25.00
8.00 - 8.49	115	58	25.00
8.50 - 8.99	124	62	29.10
9.00 - 9.49	124	62	29.10
9.50 - 9.99	133	66	29.10
10.00 - 10.49	133	66	30.00
10.50 - 10.99	142	71	35.40
11.00 - 11.49	142	71	35.40
11.50 - 11.99	152	76	35.40
12.00 - 12.49	152	76	41.45
12.50 - 12.99	152	76	41.45
13.00 - 13.49	163	81	41.45
13.50 - 13.99	163	81	41.45
14.00 - 14.49	163	81	49.75
14.50 - 14.99	163	81	49.75
15.00 - 15.49	175	87	51.15
15.50 - 15.99	175	87	51.15
16.00 - 16.49	175	87	58.15
16.50 - 16.99	175	87	58.15
17.00 - 17.49	188	93	58.15
17.50 - 17.99	188	93	58.15
18.00 - 18.49	188	93	69.25
18.50 - 18.99	188	93	69.25
19.00 - 19.99	201	100	69.25
20.00 - 20.99	215	107	78.95
21.00 - 22.99	215	107	78.95
23.00 - 25.99	231	115	97.60
26.00 - 27.99	247	124	126.80
28.00 - 29.99	247	124	139.05
30.00 - 32.00	265	133	165.95

Reamers

Centre Drills &
Spotting Drills

Countersinks
Counterbores

Slot Drills
End Mills

Taps
Dies

TUSA
Carbide Tooling

Straight flute and spiral flute

HSS M35 (5%) Cob

D	d	L	ℓ1	d2	Price £	Price £
Taper 5% - 2° 52'					Straight Flute	Spiral Flute
2	1	50	20	2	80.05	-
4	2	80	40	4	90.65	-
6	3	110	60	6	100.50	55.45
8	4	130	80	8	135.70	75.50
10	5	155	100	10	164.35	89.85
12	6	180	120	12	194.65	110.30
14	7	200	140	14	245.45	139.80
Morse No					-	-
16	8	260	160	2	-	206.95
18	9	278	180	2	-	224.15
20	10	300	200	2	-	280.65
Taper 8% - 4° 34'					Straight Flute	Spiral Flute
6	2	100	50	6	82.45	45.20
8	3	110	62	8	100.50	55.45
10	4	130	75	10	125.90	64.05
12	5	150	90	12	148.80	83.30
14	6	160	100	14	223.35	120.95
Morse No					-	-
16	7	210	112	2	-	181.55
18	8	223	125	2	-	206.95
20	9	236	137	2	-	265.90
Taper 10% - 5° 42'					Straight Flute	Spiral Flute
4	1.5	65	25	4	-	55.45
6	2	90	40	6	74.70	43.55
8	3	100	50	8	92.30	52.15
10	4	115	60	10	100.50	55.45
12	5	130	70	12	120.15	68.15
14	6	140	80	14	204.50	118.50
Morse No					-	-
16	7	190	90	2	-	148.80
18	8	200	100	2	-	166.85
20	9	210	110	2	-	224.15
25	12	250	130	3	-	322.45
30	14	280	160	3	-	537.00

