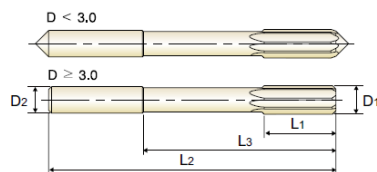


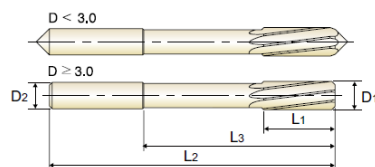
MANDRIS em Metalduro



CARBIDE, NC MACHINE REAMERS STRAIGHT FLUTES

Cod	D1	D2	L1	L3	L2	Nº nav	€
K410100200	2	4	11	20	50	4	19.05 €
K410100250	2.5	4	14	26	57	4	19.05 €
K410100300	3	4	15	31	61	6	19.05 €
K410100350	3.5	4	18	36	70	6	19.05 €
K410100400	4	4	19	42	75	6	19.05 €
K410100450	4.5	6	21	46	80	6	23.71 €
K410100500	5	6	23	51	86	6	23.71 €
K410100550	5.5	6	26	56	93	6	23.71 €
K410100600	6	6	26	56	93	6	23.71 €
K410100650	6.5	8	28	62	101	6	36.64 €
K410100700	7	8	31	68	109	6	36.64 €
K410100750	7.5	8	31	68	109	6	36.64 €
K410100800	8	8	33	74	117	6	36.64 €
K410100850	8.5	10	33	74	117	6	48.32 €
K410100900	9	10	36	80	125	6	48.32 €
K410100950	9.5	10	36	80	125	6	48.32 €
K410101000	10	10	38	86	133	6	48.32 €
K410101050	10.5	12	38	86	133	6	64.60 €
K410101100	11	12	41	95	142	6	64.60 €
K410101200	12	12	44	104	151	6	64.60 €
K410101300	13	16	44	104	151	6	108.61 €
K410101400	14	16	47	108	160	8	108.61 €
K410101500	15	16	50	110	162	8	108.61 €
K410101600	16	16	52	118	170	8	108.61 €
K410101700	17	20	54	121	175	8	129.36 €
K410101800	18	20	56	128	182	8	129.36 €
K410101900	19	20	58	129	189	8	157.41 €
K410102000	20	20	60	135	195	8	157.41 €

MANDRIS em Metalduro

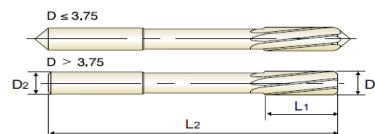


CARBIDE, NC MACHINE REAMERS
LH SPIRAL FLUTES



Cod	D1	D2	L1	L3	L2	Nº nav	€
K411100200	2	4	11	20	50	4	21.15 €
K411100250	2.5	4	14	26	57	4	21.15 €
K411100300	3	4	15	31	61	6	21.15 €
K411100350	3.5	4	18	36	70	6	21.15 €
K411100400	4	4	19	42	75	6	21.15 €
K411100450	4.5	6	21	46	80	6	26.12 €
K411100500	5	6	23	51	86	6	26.12 €
K411100550	5.5	6	26	56	93	6	26.12 €
K411100600	6	6	26	56	93	6	26.12 €
K411100650	6.5	8	28	62	101	6	40.39 €
K411100700	7	8	31	68	109	6	40.39 €
K411100750	7.5	8	31	68	109	6	40.39 €
K411100800	8	8	33	74	117	6	40.39 €
K411100850	8.5	10	33	74	117	6	53.39 €
K411100900	9	10	36	80	125	6	53.39 €
K411100950	9.5	10	36	80	125	6	53.39 €
K411101000	10	10	38	86	133	6	53.39 €
K411101050	10.5	12	38	86	133	6	71.04 €
K411101100	11	12	41	95	142	6	71.04 €
K411101200	12	12	44	104	151	6	71.04 €
K411101300	13	16	44	104	151	6	118.91 €
K411101400	14	16	47	108	160	8	118.91 €
K411101500	15	16	50	110	162	8	118.91 €
K411101600	16	16	52	118	170	8	118.91 €
K411101700	17	20	54	121	175	8	141.49 €
K411101800	18	20	56	128	182	8	141.49 €
K411101900	19	20	58	129	189	8	171.44 €
K411102000	20	20	60	135	195	8	171.44 €

MANDRIS HSS-E



- O.D. Tolerances
Whole-number Ø and 1/10 size : DIN 1420 for H7
1/100 size : from Ø2.01 to Ø5.03 : +0.004/-0.000mm
from Ø5.97 to Ø12.03 : +0.005/-0.000mm
- Shank Diameter Tolerances : h6

- LH Spiral Flutes / Right Hand Cut
- Chamfer Angle - Up to Ø3.75 : 15°
- Over Ø3.75 : 45°

Cod	D1	D2	L1	L2	€
K21B100200	2	2	11	49	6.72 €
K21B100201	2.01	2	11	49	8.12 €
K21B100202	2.02	2	11	49	8.12 €
K21B100203	2.03	2	11	49	8.12 €
K21B100210	2.1	2	11	49	5.72 €
K21B100220	2.2	3	12	53	5.72 €
K21B100230	2.3	3	12	53	5.72 €
K21B100240	2.4	3	14	57	5.72 €
K21B100247	2.47	3	14	57	6.91 €
K21B100248	2.48	3	14	57	6.91 €
K21B100249	2.49	3	14	57	6.91 €
K21B100250	2.5	3	14	57	5.72 €
K21B100251	2.51	3	14	57	6.91 €
K21B100252	2.52	3	14	57	6.91 €
K21B100253	2.53	3	14	57	6.91 €
K21B100260	2.6	3	14	57	5.72 €
K21B100270	2.7	3	15	61	5.72 €
K21B100280	2.8	3	15	61	5.72 €
K21B100290	2.9	3	15	61	5.72 €
K21B100297	2.97	3	15	61	6.91 €
K21B100298	2.98	3	15	61	6.91 €
K21B100299	2.99	3	15	61	6.91 €
K21B100300	3	3	15	61	5.72 €
K21B100301	3.01	4	16	65	7.19 €
K21B100302	3.02	4	16	65	7.19 €
K21B100303	3.03	4	16	65	7.19 €
K21B100310	3.1	4	16	65	5.89 €
K21B100320	3.2	4	16	65	5.89 €
K21B100330	3.3	4	16	65	5.89 €
K21B100340	3.4	4	18	70	5.89 €
K21B100350	3.5	4	18	70	5.89 €
K21B100360	3.6	4	18	70	6.68 €
K21B100370	3.7	4	18	70	6.68 €
K21B100380	3.8	4	19	75	6.68 €

REAMERS

CARBIDE / HSS-E NC MACHINE REAMERS
HSS HAND REAMERS
HSS-E CHUCKING REAMERS



K21B100390	3.9	4	19	75	6.68 €
K21B100397	3.97	4	19	75	7.28 €
K21B100398	3.98	4	19	75	7.28 €

Cod	D1	D2	L1	L2	€
K21B100399	3.99	4	19	75	7.28 €
K21B100400	4	4	19	75	6.68 €
K21B100401	4.01	4	19	75	8.85 €
K21B100402	4.02	4	19	75	8.85 €
K21B100403	4.03	4	19	75	8.85 €
K21B100410	4.1	4	19	75	6.68 €
K21B100420	4.2	4	19	75	6.68 €
K21B100430	4.3	5	21	80	6.85 €
K21B100440	4.4	5	21	80	6.85 €
K21B100450	4.5	5	21	80	6.85 €
K21B100460	4.6	5	21	80	6.85 €
K21B100470	4.7	5	21	80	6.85 €
K21B100480	4.8	5	23	86	6.85 €
K21B100490	4.9	5	23	86	6.85 €
K21B100497	4.97	5	23	86	7.69 €
K21B100498	4.98	5	23	86	7.69 €
K21B100499	4.99	5	23	86	7.69 €
K21B100500	5	5	23	86	6.85 €
K21B100501	5.01	5	23	86	9.00 €
K21B100502	5.02	5	23	86	9.00 €
K21B100503	5.03	5	23	86	9.00 €
K21B100510	5.1	5	23	86	6.88 €
K21B100520	5.2	5	23	86	6.88 €
K21B100530	5.3	5	23	86	7.08 €
K21B100540	5.4	6	26	93	7.08 €
K21B100550	5.5	6	26	93	7.08 €
K21B100560	5.6	6	26	93	7.08 €
K21B100570	5.7	6	26	93	7.08 €
K21B100580	5.8	6	26	93	7.08 €
K21B100590	5.9	6	26	93	7.08 €
K21B100597	5.97	6	26	93	7.97 €
K21B100598	5.98	6	26	93	7.97 €
K21B100599	5.99	6	26	93	7.97 €
K21B100600	6	6	26	93	7.08 €
K21B100601	6.01	6	28	101	9.24 €
K21B100602	6.02	6	28	101	9.24 €
K21B100603	6.03	6	28	101	9.24 €
K21B100610	6.1	6	28	101	7.47 €
K21B100620	6.2	6	28	101	7.47 €
K21B100630	6.3	6	28	101	7.47 €
K21B100640	6.4	6	28	101	7.47 €

REAMERS

CARBIDE / HSS-E NC MACHINE REAMERS
HSS HAND REAMERS
HSS-E CHUCKING REAMERS



K21B100650	6.5	6	28	101	7.47 €
K21B100660	6.6	6	28	101	7.47 €
K21B100670	6.7	6	28	101	7.47 €
K21B100680	6.8	8	31	109	8.67 €
K21B100690	6.9	8	31	109	8.67 €
K21B100700	7	8	31	109	8.67 €
K21B100710	7.1	8	31	109	8.92 €
K21B100720	7.2	8	31	109	8.92 €
K21B100730	7.3	8	31	109	8.92 €
K21B100740	7.4	8	31	109	8.92 €
K21B100750	7.5	8	31	109	8.92 €
K21B100760	7.6	8	33	117	8.92 €
K21B100770	7.7	8	33	117	8.92 €
K21B100780	7.8	8	33	117	8.92 €
K21B100790	7.9	8	33	117	8.92 €
K21B100797	7.97	8	33	117	9.09 €
K21B100798	7.98	8	33	117	9.09 €
K21B100799	7.99	8	33	117	9.09 €
K21B100800	8	8	33	117	8.92 €
K21B100801	8.01	8	33	117	9.09 €
K21B100802	8.02	8	33	117	9.09 €
K21B100803	8.03	8	33	117	9.09 €
K21B100810	8.1	8	33	117	11.04 €
K21B100820	8.2	8	33	117	11.04 €
K21B100830	8.3	8	33	117	11.04 €
K21B100840	8.4	8	33	117	11.04 €
K21B100850	8.5	8	33	117	11.04 €
K21B100860	8.6	10	36	125	12.53 €
K21B100870	8.7	10	36	125	12.53 €
K21B100880	8.8	10	36	125	12.53 €
K21B100890	8.9	10	36	125	12.53 €
K21B100900	9	10	36	125	12.53 €
K21B100901	9.01	10	36	125	14.01 €
K21B100902	9.02	10	36	125	14.01 €
K21B100903	9.03	10	36	125	14.01 €
K21B100910	9.1	10	36	125	12.53 €
K21B100920	9.2	10	36	125	12.53 €
K21B100930	9.3	10	36	125	12.53 €
K21B100940	9.4	10	36	125	12.53 €
K21B100950	9.5	10	36	125	12.53 €
K21B100960	9.6	10	38	133	12.53 €
K21B100970	9.7	10	38	133	12.53 €
K21B100980	9.8	10	38	133	12.53 €
K21B100990	9.9	10	38	133	12.53 €
K21B100997	9.97	10	38	133	12.53 €
K21B100998	9.98	10	38	133	12.53 €
K21B100999	9.99	10	38	133	12.53 €
K21B101000	10	10	38	133	12.53 €

REAMERS

CARBIDE / HSS-E NC MACHINE REAMERS
HSS HAND REAMERS
HSS-E CHUCKING REAMERS



K21B101001	10.01	10	38	133	13.55 €
K21B101002	10.02	10	38	133	13.55 €
K21B101003	10.03	10	38	133	13.55 €
K21B101100	11	10	41	142	14.25 €
K21B101197	11.97	10	41	151	17.67 €
K21B101198	11.98	10	41	151	17.67 €
K21B101199	11.99	10	41	151	17.67 €
K21B101200	12	10	44	151	15.01 €
K21B101201	12.01	10	44	151	15.39 €
K21B101202	12.02	10	44	151	15.39 €
K21B101203	12.03	10	44	151	15.39 €
K21B101300	13	10	44	151	16.08 €
K21B101400	14	14	47	160	18.69 €
K21B101500	15	14	50	162	20.37 €
K21B101600	16	14	52	170	21.07 €
K21B101700	17	14	54	175	25.64 €
K21B101800	18	14	56	182	25.99 €
K21B101900	19	16	58	189	28.25 €
K21B102000	20	16	60	195	28.79 €

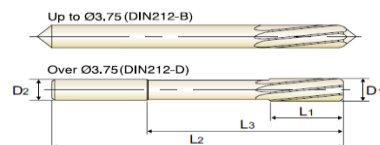
HSS-E, CHUCKING REAMER-QUICK SPIRAL

Material	Cutting Speed	Feed(mm/rev.)			
	(m/min.)	Ø2 ~ Ø4	Ø4 ~ Ø8	Ø8 ~ Ø13	Ø13 ~ Ø20
Steels < 500N/mm ²	16 ~ 18	0.08-0.16	0.16-0.25	0.20-0.30	0.30-0.40
Steels 500-700N/mm ²	14 ~ 16	0.08-0.16	0.16-0.25	0.20-0.30	0.30-0.40
Aluminum or Aluminum Alloy	18 ~ 22	0.10-0.20	0.20-0.30	0.30-0.40	0.40-0.60
Magnesium or Magnesium Alloy	10 ~ 16	0.08-0.16	0.16-0.25	0.20-0.30	0.30-0.40
Copper, Brass	16 ~ 20	0.08-0.16	0.16-0.25	0.20-0.30	0.30-0.40
Plastics	12 ~ 14	0.10-0.20	0.20-0.30	0.30-0.40	0.40-0.60

HSS-E, STRAIGHT & LH SPIRAL FLUTE CHUCKING REAMER, NC MACHINE REAMER

Material	Cutting Speed	Feed(mm/rev.)					
	(m/min.)	Ø2 ~ Ø4	Ø4 ~ Ø8	Ø8 ~ Ø13	Ø13 ~ Ø20	Ø20 ~ Ø30	> Ø30
Steels < 500N/mm ²	12 ~ 16	0.05-0.15	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50
Steels 500-700N/mm ²	10 ~ 12	0.05-0.15	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50
Steels 700-800N/mm ²	6 ~ 8	0.05-0.10	0.08-0.16	0.10-0.20	0.15-0.25	0.20-0.30	0.30-0.40
Alloy Steel or Carbon Steel castings < 500N/mm ²	6 ~ 10	0.05-0.10	0.08-0.16	0.10-0.20	0.15-0.25	0.20-0.30	0.30-0.40
Alloy Steel or Carbon Steel castings > 500N/mm ²	4 ~ 6	0.05-0.10	0.08-0.16	0.10-0.20	0.15-0.25	0.20-0.30	0.30-0.40
Alloy Steel or Carbon Steel forgings	4 ~ 6	0.03-0.08	0.06-0.10	0.08-0.15	0.10-0.20	0.15-0.25	0.20-0.30
Cast Iron < 200HB	12 ~ 14	0.05-0.15	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50
Cast Iron > 200HB	10 ~ 12	0.05-0.10	0.08-0.16	0.10-0.20	0.15-0.25	0.20-0.30	0.30-0.40
Aluminum or Aluminum Alloy	16 ~ 20	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50	0.40-0.60
Magnesium or Magnesium Alloy	10 ~ 16	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50	0.40-0.60
Copper, Brass	16 ~ 18	0.10-0.20	0.15-0.25	0.20-0.30	0.25-0.40	0.35-0.50	0.40-0.60
Stainless Steels	4 ~ 6	0.03-0.08	0.06-0.10	0.08-0.15	0.10-0.20	0.15-0.25	0.20-0.30
Plastics	8 ~ 12	0.10-0.20	0.20-0.30	0.30-0.40	0.40-0.50	0.50-0.60	0.60-0.80

MANDRIS HSS-E



HSS-E, STRAIGHT SHANK CHUCKING REAMERS LH SPIRAL FLUTES

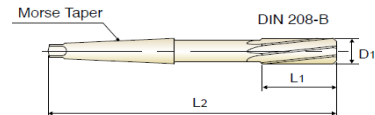


► O.D. Tolerances : DIN 1420 for H7
► Shank Diameter Tolerances : h8
► LH Spiral Flutes / Right Hand Cut

Cod	D1	D2	L1	L3	L2	€
K211100200	2	2	11	-	49	7.54 €
K211100220	2.2	2.2	12	-	53	6.37 €
K211100250	2.5	2.5	14	-	57	6.37 €
K211100260	2.6	2.6	14	-	57	6.37 €
K211100280	2.8	2.8	15	-	61	6.37 €
K211100300	3	3	15	-	61	6.37 €
K211100310	3.1	3.1	16	-	65	6.37 €
K211100320	3.2	3.2	16	-	65	6.37 €
K211100350	3.5	3.5	18	-	70	6.37 €
K211100360	3.6	3.6	18	-	70	6.82 €
K211100370	3.7	3.7	18	-	70	6.82 €
K211100400	4	4	19	42	75	6.82 €
K211100430	4.3	4.5	21	46	80	7.10 €
K211100450	4.5	4.5	21	46	80	7.10 €
K211100460	4.6	4.5	21	46	80	7.23 €
K211100500	5	5	23	51	86	7.23 €
K211100550	5.5	5.6	26	56	93	7.44 €
K211100560	5.6	5.6	26	56	93	7.51 €
K211100600	6	5.6	26	56	93	7.51 €
K211100650	6.5	6.3	28	62	101	7.51 €
K211100700	7	7.1	31	68	109	9.43 €
K211100720	7.2	7.1	31	68	109	9.66 €
K211100800	8	8	33	74	117	9.66 €
K211100830	8.3	8	33	74	117	12.34 €
K211100850	8.5	8	33	74	117	12.34 €
K211100900	9	9	36	80	125	12.34 €
K211100950	9.5	9	36	80	125	12.34 €
K211101000	10	10	38	86	133	12.34 €
K211101050	10.5	10	38	86	133	15.31 €
K211101100	11	10	41	95	142	15.31 €
K211101200	12	10	44	104	151	15.96 €
K211101300	13	10	44	104	151	18.89 €
K211101400	14	12.5	47	108	160	19.66 €
K211101500	15	12.5	50	110	162	21.25 €
K211101600	16	12.5	52	118	170	22.05 €
K211101700	17	14	54	121	175	26.76 €

K211101800	18	14	56	128	182	27.55 €
K211101900	19	16	58	129	189	30.01 €
K211102000	20	16	60	135	195	30.43 €

MANDRIS HSS-E



HSS-E, MORSE TAPER SHANK CHUCKING REAMERS
LH SPIRAL FLUTES



Cod	D1	CM	L1	L3	€
K211201000	10	1	38	168	14.18 €
K211201100	11	1	41	175	16.70 €
K211201200	12	1	44	182	16.70 €
K211201300	13	1	44	182	16.70 €
K211201400	14	1	47	189	16.70 €
K211201500	15	2	50	204	19.17 €
K211201600	16	2	52	210	20.13 €
K211201700	17	2	54	214	23.54 €
K211201800	18	2	56	219	23.54 €
K211201900	19	2	58	223	25.57 €
K211202000	20	2	60	228	25.57 €
K211202100	21	2	62	232	32.14 €
K211202200	22	2	64	237	32.14 €
K211202300	23	2	66	241	37.39 €
K211202400	24	3	68	268	39.23 €
K211202500	25	3	68	268	39.23 €
K211202600	26	3	70	273	48.80 €
K211202700	27	3	71	277	54.26 €
K211202800	28	3	71	277	54.26 €
K211202900	29	3	73	281	56.10 €
K211203000	30	3	73	281	56.10 €
K211203100	31	3	75	285	56.28 €
K211203200	32	4	77	317	66.19 €
K211203400	34	4	78	321	70.19 €
K211203500	35	4	78	321	70.19 €
K211203600	36	4	79	325	88.03 €
K211203800	38	4	81	329	97.61 €
K211204000	40	4	81	329	97.61 €
K211204100	41	4	82	333	137.28 €
K211204200	42	4	82	333	137.28 €
K211204300	43	4	83	336	142.37 €
K211204400	44	4	83	336	142.37 €

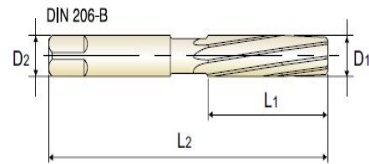
REAMERS

CARBIDE / HSS-E NC MACHINE REAMERS
HSS HAND REAMERS
HSS-E CHUCKING REAMERS



K211204500	45	4	83	336	142.37 €
K211204600	46	4	84	340	177.91 €
K211204700	47	4	84	340	177.91 €
K211204800	48	4	86	344	177.91 €
K211205000	50	4	86	344	177.91 €

MANDRIS HSS



D1 = D2

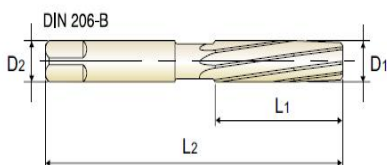
HSS, HAND REAMERS LH SPIRAL FLUTES



► O.D. Tolerances : DIN 1420, H7
► Shank Diameter ≈ Nominal Reamer Diameter
► LH Spiral Flutes / Right Hand Cut

Cod	D1	L1	L2	€
K115300200	2	25	50	5.81 €
K115300220	2.2	27	54	5.81 €
K115300250	2.5	29	58	5.81 €
K115300280	2.8	31	62	6.29 €
K115300300	3	31	62	6.29 €
K115300320	3.2	33	66	6.29 €
K115300350	3.5	35	71	6.29 €
K115300400	4	38	76	6.16 €
K115300450	4.5	41	81	6.16 €
K115300500	5	44	87	6.04 €
K115300550	5.5	47	93	6.51 €
K115300600	6	47	93	6.74 €
K115300700	7	54	107	7.10 €
K115300800	8	58	115	7.27 €
K115300900	9	62	124	9.63 €
K115301000	10	66	133	9.63 €
K115301100	11	71	142	9.67 €
K115301200	12	76	152	10.68 €
K115301300	13	76	152	15.82 €
K115301400	14	81	163	17.95 €
K115301500	15	81	163	19.87 €
K115301600	16	87	175	20.44 €
K115301700	17	87	175	21.64 €
K115301800	18	93	188	24.28 €
K115301900	19	93	188	24.28 €
K115302000	20	100	201	26.25 €
K115302200	22	107	215	32.38 €
K115302400	24	115	231	39.40 €

MANDRIS HSS



D1 = D2

HSS, HAND REAMERS LH SPIRAL FLUTES

HSS

DIN
206

H7

LH7*

► O.D. Tolerances : DIN 1420, H7
► Shank Diameter = Nominal Reamer Diameter
► LH Spiral Flutes / Right Hand Cut

Cod	D1	L1	L2	€
K115302500	25	115	231	40.14 €
K115302600	26	115	231	41.77 €
K115302700	27	124	247	55.20 €
K115302800	28	124	247	55.20 €
K115302900	29	124	247	57.80 €
K115303000	30	124	247	57.80 €
K115303100	31	133	265	63.78 €
K115303200	32	133	265	63.78 €
K115303300	33	133	265	64.74 €
K115303400	34	142	284	64.74 €
K115303500	35	142	284	77.42 €
K115303600	36	142	284	77.42 €
K115303700	37	142	284	77.85 €
K115303800	38	152	305	80.31 €
K115303810	38.1	152	305	81.50 €
K115303900	39	152	305	84.29 €
K115304000	40	152	305	85.99 €
K115304100	41	152	305	91.56 €
K115304200	42	152	305	95.61 €
K115304300	43	163	326	99.27 €
K115304400	44	163	326	104.69 €
K115304500	45	163	326	111.02 €
K115304600	46	163	326	114.86 €
K115304700	47	163	326	122.09 €
K115304800	48	174	347	127.69 €
K115304900	49	174	347	131.68 €
K115305200	52	174	347	153.35 €
K115306000	60	184	367	215.92 €