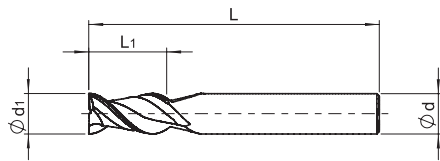


**UMT 9412 Z=2**  
End mills for aluminium

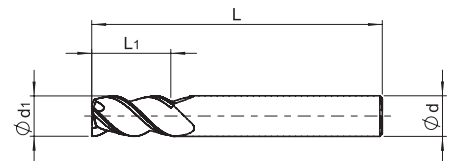


HM

d <sub>1</sub> (e8)	L <sub>1</sub>	d (h6)	L	Stock	ART No
3	7	3	38	●	9412030003800-0
4	8	4	50	●	9412040005000-0
5	10	5	50	●	9412050005000-0
6	10	6	57	●	9412060005700-0
8	16	8	63	●	9412080006300-0
10	19	10	72	●	9412100007200-0
12	22	12	83	●	9412120008300-0
14	22	14	83	●	9412140008300-0
16	26	16	92	●	9412160009200-0
18	26	18	92	●	9412180009200-0
20	32	20	104	●	9412200010400-0

● In stock

**UMT 9413 Z=3**  
End mills for aluminium



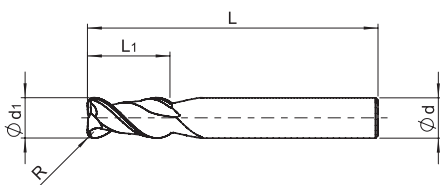
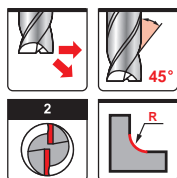
HM

d <sub>1</sub> (e8)	L <sub>1</sub>	d (h6)	L	R(±0.02)	Stock	ART No
3	7	3	38		●	9413030003800-0
4	8	4	50		●	9413040005000-0
5	10	5	50		●	9413050005000-0
6	10	6	57		●	9413060005700-0
8	16	8	63		●	9413080006300-0
10	19	10	72		●	9413100007200-0
10	19	10	72	0.5	○	9413100007205-0
10	19	10	72	1.0	○	9413100007210-0
12	22	12	83		●	9413120008300-0
12	22	12	83	0.5	○	9413120008305-0
12	22	12	83	1.0	○	9413120008310-0
14	22	14	83		●	9413140008300-0
16	26	16	92		●	9413160009200-0
16	26	16	92	0.5	○	9413160009205-0
16	26	16	92	1.0	○	9413160009210-0
18	26	18	92		●	9413180009200-0
20	32	20	104		●	9413200010400-0

● In stock

○ Produced to order only

**UMT 9512 Z=2**  
End mills with corner radius  
for aluminium



HM

d <sub>1</sub> (e8)	L <sub>1</sub>	d (h6)	L	R(±0.02)	Stock	ART No
4	8	4	50	0.3	●	9512040005003-0
6	12	6	57	0.5	●	9512060005705-0
8	16	8	63	0.5	●	9512080006305-0
8	16	8	63	1.0	●	9512080006310-0
8	16	8	63	1.5	●	9512080006315-0
10	20	10	72	0.5	●	9512100007205-0
10	20	10	72	1.0	●	9512100007210-0
10	20	10	72	1.5	●	9512100007215-0
12	24	12	83	1.0	●	9512120008310-0
12	24	12	83	1.5	●	9512120008315-0
12	24	12	83	2.0	●	9512120008320-0

● In stock

Recommended cutting conditions for end mills 9412, 9413, 9512 - Shoulder milling

Work material			Cutting speed V <sub>c</sub> (m/min)	d <sub>1</sub> - diameter in mm						f <sub>z</sub> - feed per tooth in mm	
	Ap	Ae		HM	Ø3 - Ø6	Ø6 - Ø8	Ø8 - Ø10	Ø10 - Ø12	Ø12 - Ø16	Ø16 - Ø20	
<b>N</b> Aluminium alloy Si<8%	<1.5d <sub>1</sub>	<0.3d <sub>1</sub>	220-230	0.05-0.06	0.06-0.08	0.08-0.11	0.11-0.14	0.14-0.18	0.18-0.20		
Cast aluminium Si>8%	<1.5d <sub>1</sub>	<0.3d <sub>1</sub>	180-190	0.04-0.06	0.06-0.07	0.07-0.10	0.10-0.13	0.13-0.16	0.16-0.18		
Copper alloy	<1.5d <sub>1</sub>	<0.3d <sub>1</sub>	140-155	0.04-0.06	0.06-0.07	0.07-0.10	0.10-0.13	0.13-0.16	0.16-0.18		

Recommended cutting conditions for end mills 9412, 9413, 9512 - Slotting

Work material			Cutting speed V <sub>c</sub> (m/min)	d <sub>1</sub> - diameter in mm						f <sub>z</sub> - feed per tooth in mm	
	Ap	HM		Ø3 - Ø6	Ø6 - Ø8	Ø8 - Ø10	Ø10 - Ø12	Ø12 - Ø16	Ø16 - Ø20		
<b>N</b> Aluminium alloy Si<8%	<1d <sub>1</sub>	180-190	0.02-0.04	0.04-0.06	0.06-0.08	0.08-0.11	0.11-0.13	0.13-0.16			
Cast aluminium Si>8%	<1d <sub>1</sub>	160-170	0.02-0.04	0.04-0.06	0.06-0.08	0.08-0.11	0.11-0.13	0.13-0.16			
Copper alloy	<1d <sub>1</sub>	130-140	0.02-0.04	0.04-0.06	0.06-0.08	0.08-0.11	0.11-0.13	0.13-0.16			

1. Cutting conditions to be adjusted according to cutting style, rigidity of machine and work clamping
2. In case of ramping, reduction of the above data by 30-60% is recommended

High speed cutting conditions for end mills 9412, 9413, 9512 - Shoulder milling

Work material			Cutting speed V <sub>c</sub> (m/min)	d <sub>1</sub> - diameter in mm						f <sub>z</sub> - feed per tooth in mm	
	Ap	Ae		HM	Ø3 - Ø6	Ø6 - Ø8	Ø8 - Ø10	Ø10 - Ø12	Ø12 - Ø16	Ø16 - Ø20	
<b>N</b> Aluminium alloy Si<8%	<0.8d <sub>1</sub>	<0.3d <sub>1</sub>	360-400	0.04-0.055	0.055-0.08	0.08-0.11	0.11-0.13	0.13-0.18	0.18-0.20		
Cast aluminium Si>8%	<0.8d <sub>1</sub>	<0.3d <sub>1</sub>	330-350	0.035-0.045	0.045-0.07	0.07-0.10	0.10-0.12	0.12-0.15	0.15-0.17		
Copper alloy	<0.8d <sub>1</sub>	<0.3d <sub>1</sub>	260-280	0.035-0.045	0.045-0.07	0.07-0.10	0.10-0.12	0.12-0.15	0.15-0.17		

High speed cutting conditions for end mills 9412, 9413, 9512 - Slotting

Work material			Cutting speed V <sub>c</sub> (m/min)	d <sub>1</sub> - diameter in mm						f <sub>z</sub> - feed per tooth in mm	
	Ap	HM		Ø3 - Ø6	Ø6 - Ø8	Ø8 - Ø10	Ø10 - Ø12	Ø12 - Ø16	Ø16 - Ø20		
<b>N</b> Aluminium alloy Si<8%	<0.5d <sub>1</sub>	360-380	0.02-0.04	0.04-0.06	0.06-0.07	0.07-0.08	0.08-0.11	0.11-0.125			
Cast aluminium Si>8%	<0.5d <sub>1</sub>	290-300	0.02-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.09	0.09-0.11			
Copper alloy	<0.5d <sub>1</sub>	210-230	0.02-0.04	0.04-0.05	0.05-0.06	0.06-0.07	0.07-0.09	0.09-0.11			

1. Cutting conditions to be adjusted according to cutting style, rigidity of machine and work clamping
2. In case of ramping, reduction of the above data by 30-60% is recommended