Shoulder Mills

Mill 1-10™ • High-Performance Shoulder Milling Platform

Primary Application

The multifunctional Mill 1-10 platform works with all tool materials in shoulder, ramp, slot, plunge, and helical milling with one insert style to improve productivity and reduce inventory and machining costs. The super positive cutting rake, soft cutting action, and low cutting forces enable higher feed rates and spindle protection. Innovative insert and cutter body designs offer improved ramping capabilities.

Features and Benefits

Versatility

- Works with all tool materials.
- Capable of shoulder, ramp, plunge, and helical milling.
- Internal coolant and air supply.

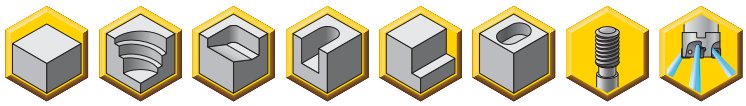
Advantages

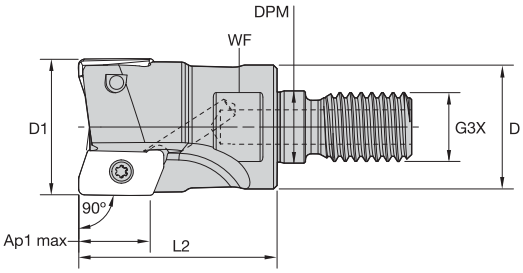
- Optimised soft cutting edge.
- Elliptical edge generates 90° wall.
- Increased ramping capability due to state of the art insert and cutter body design.
- Innovative chip gash design for excellent chip evacuation and perfect cutter body stability.
- All pockets are machined into heat-treated materials, guaranteeing best-in-class runout and pocket strength.
- Inserts feature innovative margin along the main cutting edge, corner nose radius, and wiper facet for perfect edge stability.

*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Screw-On

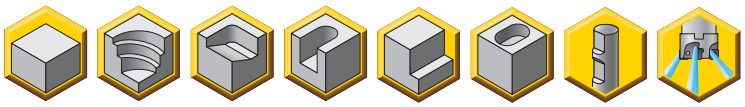
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3745708	**16A02R025M08ED10**	16	13	8,5	M8	25	10	10,1	2	9.5°	0,02	50100
3745709	**20A02R028M10ED10**	20	18	10,5	M10	28	15	10,1	2	6.0°	0,04	44800
3745710	**20A03R028M10ED10**	20	18	10,5	M10	28	15	10,1	3	6.0°	0,05	44800
3745711	**25A03R032M12ED10**	25	21	12,5	M12	32	17	10,0	3	4.0°	0,09	40000
3745712	**25A04R032M12ED10**	25	21	12,5	M12	32	17	10,0	4	4.0°	0,08	40000
3745723	**32A04R040M16ED10**	32	29	17,0	M16	40	24	10,0	4	2.8°	0,19	35400
3745724	**32A05R040M16ED10**	32	29	17,0	M16	40	24	10,0	5	2.8°	0,19	35400
3745725	**40A06R040M16ED10**	40	29	17,0	M16	40	24	9,9	6	2.0°	0,23	31600
3745726	**42A06R040M16ED10**	42	29	17,0	M16	40	24	9,9	6	1.8°	0,23	30900

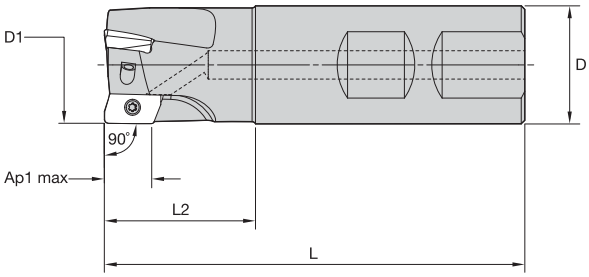
Spare Parts

D1	insert screw	Nm	Torx wrench
16	**MS2205**	1,0	**F7IP**
20	**MS2205**	1,0	**F7IP**
25	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**
40	**MS2205**	1,0	**F7IP**
42	**MS2205**	1,0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Weldon® Shank

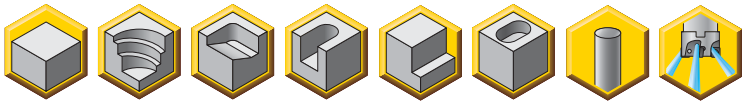
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744633	**16A02R025B16ED10**	16	16	74	25	10,1	2	9.5°	0,09	50100
3744634	**20A02R028B20ED10**	20	20	79	28	10,1	2	6.0°	0,15	44800
3744635	**20A03R028B20ED10**	20	20	79	28	10,1	3	6.0°	0,15	44800
3744636	**25A03R032B25ED10**	25	25	89	32	10,0	3	4.0°	0,28	40000
3744637	**25A04R032B25ED10**	25	25	89	32	10,0	4	4.0°	0,28	40000
3744638	**32A04R040B32ED10**	32	32	101	40	10,0	4	2.8°	0,53	35400
3744639	**32A05R040B32ED10**	32	32	101	40	10,0	5	2.8°	0,53	35400

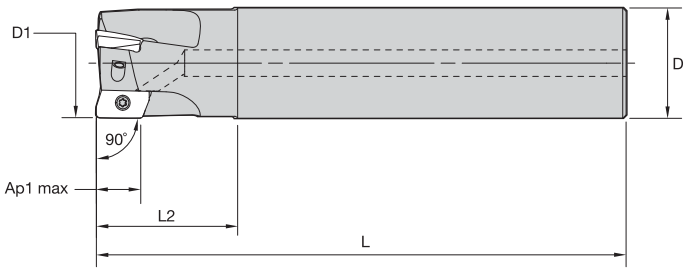
Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

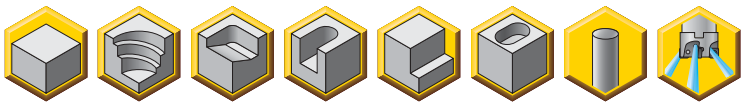
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744538	**12A01R020A16ED10**	12	16	90	20	10,3	1	11.5°	0,12	57800
3744539	**16A02R025A16ED10**	16	16	100	25	10,1	2	9.5°	0,13	50100
3744616	**16A02R025A16ED10-170**	16	16	170	25	10,1	2	9.5°	0,23	50100
3744618	**18A02R028A16ED10-170**	18	16	170	28	10,1	2	7.5°	0,24	47200
3744540	**20A02R028A20ED10**	20	20	110	28	10,1	2	6.0°	0,23	44800
3744619	**20A02R032A20ED10-170**	20	20	170	32	10,1	2	6.0°	0,37	44800
3744541	**20A03R028A20ED10**	20	20	110	28	10,1	3	6.0°	0,22	44800
3744621	**20A03R032A20ED10-170**	20	20	170	32	10,1	3	6.0°	0,36	44800
3744623	**22A03R032A20ED10-170**	22	20	170	32	10,1	3	5.0°	0,37	42700
3744542	**25A03R032A25ED10**	25	25	120	32	10,0	3	4.0°	0,40	40000
3744624	**25A03R040A25ED10-200**	25	25	200	40	10,0	3	4.0°	0,69	40000
3744613	**25A04R032A25ED10**	25	25	120	32	10,0	4	4.0°	0,40	40000
3744626	**25A04R040A25ED10-200**	25	25	200	40	10,0	4	4.0°	0,68	40000
3744628	**28A04R040A25ED10-200**	28	25	200	40	10,0	4	3.3°	0,71	37800
3744614	**32A04R040A32ED10**	32	32	130	40	10,0	4	2.8°	0,72	35400
3744629	**32A04R048A32ED10-200**	32	32	200	48	10,0	4	2.8°	1,14	35400
3744615	**32A05R040A32ED10**	32	32	130	40	10,0	5	2.8°	0,71	35400
3744631	**32A05R048A32ED10-200**	32	32	200	48	10,0	5	2.8°	1,13	35400

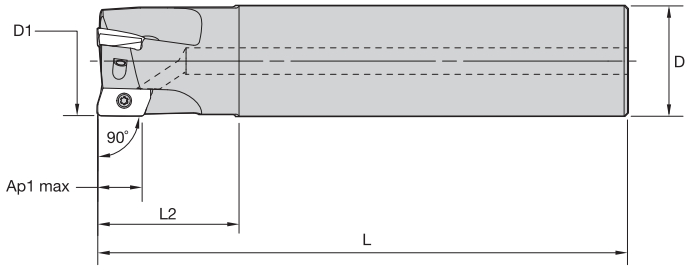
Spare Parts

D1	insert screw	Nm	Torx Plus driver
12	**MS2205**	1,0	**DT7IP**
16	**MS2205**	1,0	**DT7IP**
18	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
22	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
28	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank • Long Length

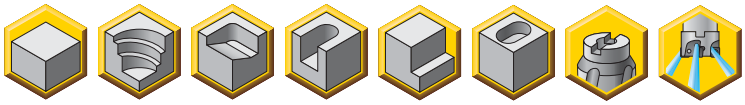
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744617	**16A02R025A16ED10R31-170**	16	16	170	25	9,7	2	8.0°	0,23	50100
3744620	**20A02R032A20ED10R31-170**	20	20	170	32	9,8	2	4.5°	0,37	44800
3744622	**20A03R032A20ED10R31-170**	20	20	170	32	9,8	3	4.5°	0,36	44800
3744625	**25A03R040A25ED10R31-200**	25	25	200	40	9,8	3	3.0°	0,69	40000
3744627	**25A04R040A25ED10R31-200**	25	25	200	40	9,8	4	3.0°	0,68	40000
3744630	**32A04R048A32ED10R31-200**	32	32	200	48	9,7	4	2.0°	1,13	35400
3744632	**32A05R048A32ED10R31-200**	32	32	200	48	9,7	5	2.0°	1,13	35400

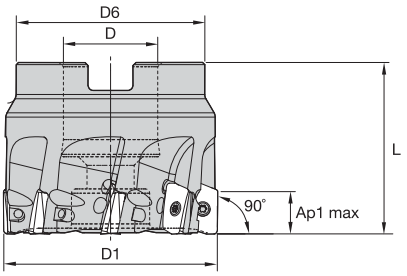
Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: For inserts with corner nose radii 2,4 and 3,1.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745674	**40A04RS90ED10D**	40	16	37	40	9,9	4	2.0°	0,25	31600
3745675	**40A06RS90ED10D**	40	16	37	40	9,9	6	2.0°	0,24	31600
3745676	**50A05RS90ED10D**	50	22	44	40	9,9	5	1.5°	0,38	28300
3745677	**50A08RS90ED10D**	50	22	44	40	9,9	8	1.5°	0,36	28300
3745678	**63A06RS90ED10D**	63	22	44	40	9,9	6	1.0°	0,54	25200
3745679	**63A09RS90ED10D**	63	22	44	40	9,9	9	1.0°	0,53	25200
3745680	**80A08RS90ED10D**	80	27	60	50	9,9	8	0.80°	1,26	22400
3745681	**80A10RS90ED10D**	80	27	60	50	9,9	10	0.80°	1,25	22400
3745682	**100B08RS90ED10D**	100	32	80	50	9,9	8	0.50°	1,88	20000
3745703	**100B12RS90ED10D**	100	32	80	50	9,9	12	0.50°	1,85	20000

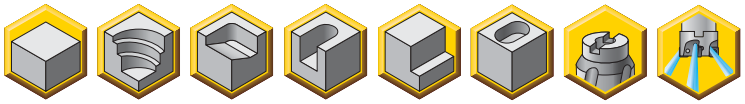
Spare Parts

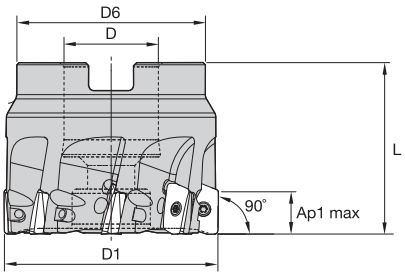


D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	**MS2205**	1,0	**DT7IP**	**MS1294**
50	**MS2205**	1,0	**DT7IP**	**MS1234**
63	**MS2205**	1,0	**DT7IP**	**MS1234**
80	**MS2205**	1,0	**DT7IP**	**MS2038**
100	**MS2205**	1,0	**DT7IP**	–

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mills • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745704	**80A08RS90ED10D-J**	80	25,40	1.000	56	50	9,9	8	0.80°	1,18	22400
3745705	**80A10RS90ED10D-J**	80	25,40	1.000	56	50	9,9	10	0.80°	1,17	22400
3745706	**100B08RS90ED10D-J**	100	31,75	1.250	73	50	9,9	8	0.50°	1,69	20000
3745707	**100B12RS90ED10D-J**	100	31,75	1.250	73	50	9,9	12	0.50°	1,67	20000

Spare Parts

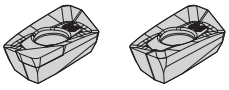


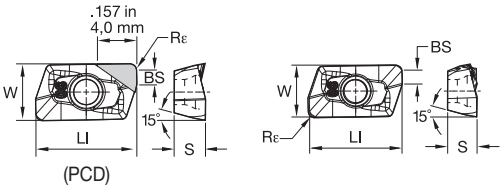
D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
80	**MS2205**	1,0	**DT7IP**	**MS2038**
100	**MS2205**	1,0	**DT7IP**	**–**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–


EDCT-PCD EDCT-F.LDJ



beyond

P					○		○	●		●	●	
M							●	●		○	○	
K					●	●	○		●	○	○	
N	●	●	●	○								●
S							●	●				
H					●		●			○		
	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410	

● first choice
○ alternate choice

EDCT-PCD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDFR-PCD	12,04	6,75	3,75	2,10	0,4	0,02	1											●
EDCT10T308PDFR-PCD	12,05	6,74	3,75	1,71	0,8	0,02	1											●

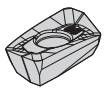
EDCT-F.LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDFRLDJ	12,05	6,75	3,75	2,29	0,2	0,02	2	●	●									
EDCT10T304PDFRLDJ	12,05	6,75	3,75	1,98	0,4	0,02	2	●	●									
EDCT10T308PDFRLDJ	12,05	6,74	3,75	1,70	0,8	0,02	2	●	●									
EDCT10T312PDFRLDJ	12,06	6,74	3,75	1,30	1,2	0,02	2	●	●									
EDCT10T316PDFRLDJ	12,06	6,74	3,75	0,90	1,6	0,02	2	●	●									
EDCT10T320PDFRLDJ	12,06	6,73	3,75	0,49	2,0	0,02	2	●	●									
EDCT10T324PDFRLDJ	12,06	6,73	3,75	0,11	2,4	0,02	2	●	●									
EDCT10T331PDFRLDJ	11,52	6,71	3,75	–	3,1	0,02	2	●	●									

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–

Indexable Inserts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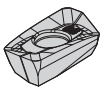
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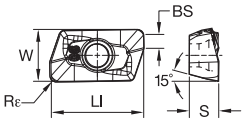
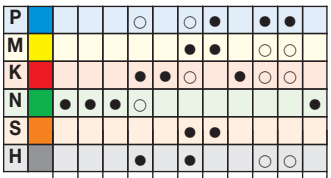


beyond

● first choice
○ alternate choice



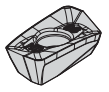
Shoulder Mills

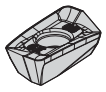
EDCT-E.LDJ

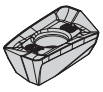
catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDERLDJ	12,05	6,75	3,75	1,98	0,4	0,03	2			●								
EDCT10T308PDERLDJ	12,05	6,74	3,75	1,70	0,8	0,03	2			●								
EDCT10T312PDERLDJ	12,06	6,74	3,75	1,30	1,2	0,03	2			●								
EDCT10T316PDERLDJ	12,06	6,74	3,75	0,90	1,6	0,03	2			●								
EDCT10T320PDERLDJ	12,06	6,73	3,75	0,49	2,0	0,03	2			●								
EDCT10T324PDERLDJ	12,06	6,73	3,75	0,11	2,4	0,03	2			●								
EDCT10T331PDERLDJ	11,52	6,71	3,75	–	3,1	0,03	2			●								

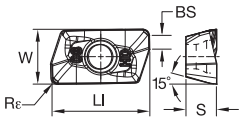
EDCT-LD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDERLD	12,04	6,75	3,75	2,29	0,2	0,04	2						●	●		●	●	
EDCT10T304PDERLD	12,05	6,75	3,75	1,98	0,4	0,04	2				●	●	●	●		●	●	
EDCT10T308PDERLD	12,05	6,74	3,75	1,70	0,8	0,04	2				●	●	●	●	●	●	●	
EDCT10T312PDERLD	12,06	6,74	3,75	1,30	1,2	0,04	2					●	●	●			●	
EDCT10T316PDERLD	12,06	6,74	3,75	0,90	1,6	0,04	2					●	●	●			●	
EDCT10T320PDERLD	12,06	6,73	3,75	0,49	2,0	0,04	2						●	●			●	
EDCT10T324PDERLD	12,06	6,73	3,75	0,11	2,4	0,04	2						●	●		●	●	
EDCT10T331PDERLD	11,52	6,71	3,75	–	3,1	0,04	2					●	●	●		●	●	


EDPT-E.HD


EDPT-S.GE


EDPT-S.GD



beyond

● first choice
○ alternate choice

P						○	●		●	●		
M						●	●		○	○		
K				●	●	○		●	○	○		
N	●	●	●								●	
S						●	●					
H				●		●			○	○		

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDERHD	12,05	6,75	3,75	2,07	0,4	0,08	2					●	●	●	●		●	
EDPT10T308PDERHD	12,05	6,74	3,75	1,70	0,8	0,08	2					●	●	●	●		●	
EDPT10T310PDERHD	12,05	6,74	3,75	1,49	1,0	0,08	2						●	●	●		●	
EDPT10T312PDERHD	12,06	6,74	3,75	1,30	1,2	0,08	2					●	●	●	●		●	
EDPT10T316PDERHD	12,06	6,74	3,75	0,90	1,6	0,08	2					●	●	●	●		●	
EDPT10T320PDERHD	12,06	6,74	3,75	0,49	2,0	0,08	2							●			●	
EDPT10T324PDERHD	12,06	6,74	3,75	0,11	2,4	0,08	2							●			●	
EDPT10T331PDERHD	11,52	6,71	3,75	–	3,1	0,08	2					●	●	●			●	

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGE	12,04	6,75	3,75	2,08	0,4	0,14	2						●	●			●	
EDPT10T308PDSRGE	12,05	6,74	3,75	1,70	0,8	0,14	2						●	●			●	
EDPT10T312PDSRGE	12,05	6,74	3,75	1,30	1,2	0,14	2						●	●			●	
EDPT10T316PDSRGE	12,06	6,74	3,75	0,90	1,6	0,14	2						●	●			●	
EDPT10T331PDSRGE	11,51	6,71	3,75	–	3,1	0,14	2						●	●			●	

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGD	12,05	6,75	3,75	2,07	0,4	0,13	2					●		●	●		●	
EDPT10T308PDSRGD	12,05	6,74	3,75	1,70	0,8	0,13	2					●		●	●		●	
EDPT10T312PDSRGD	12,06	6,74	3,75	1,30	1,2	0,13	2					●		●	●		●	
EDPT10T316PDSRGD	12,06	6,74	3,75	0,90	1,6	0,13	2					●		●	●		●	

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC422M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	245	**200**	170	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	190	**170**	150	–	–	–	–	–	–	295	**265**	240	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	–	–	–	230	**205**	190	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	–	–	–	195	**175**	160	175	**160**	145	150	**135**	120
N	1–2	795	**695**	600	1215	**1080**	995	1075	**945**	875	640	**570**	525	–	–	–	–	–	–
	3	–	–	–	1080	**995**	915	945	**875**	760	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	160	**130**	90	–	–	–	120	**90**	70

Material Group		KC725M			KCK15			KCPM20			KCPK30			KD1410		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370	–	–	–
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230	–	–	–
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205	–	–	–
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160	–	–	–
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210	–	–	–
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–	–	–	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155	–	–	–
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140	–	–	–
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115	–	–	–
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240	–	–	–
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190	–	–	–
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	2755	**2450**	2255
	3	–	–	–	–	–	–	–	–	–	–	–	–	2285	**1670**	1355
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

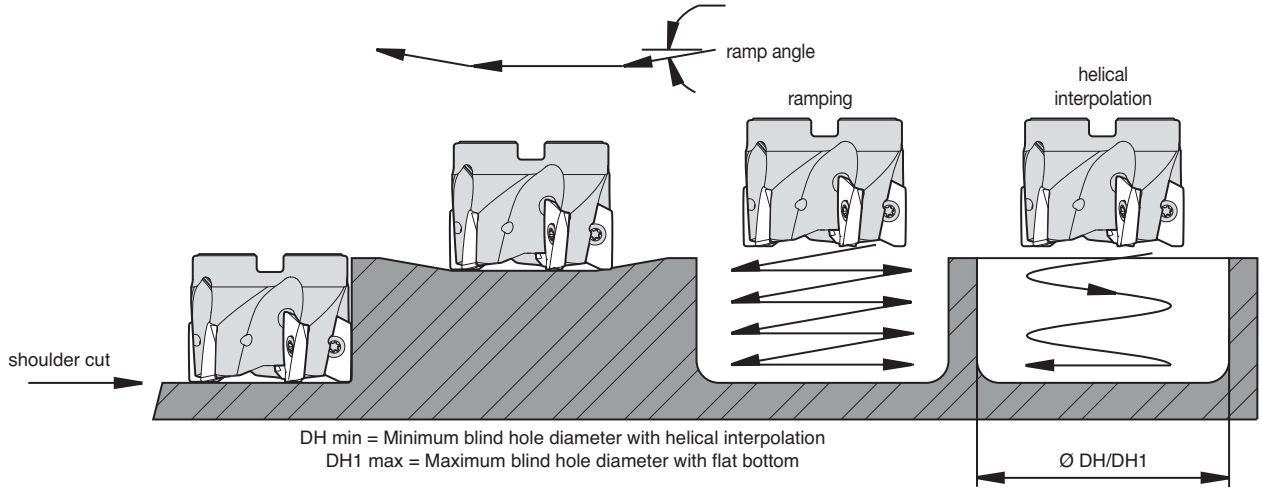
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,13**	0,23	0,06	**0,10**	0,18	0,06	**0,09**	0,15	0,05	**0,08**	0,14	0,05	**0,08**	0,14	.F..LDJ
.F..-PCD	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..-PCD
.E..LDJ	0,08	**0,18**	0,30	0,06	**0,13**	0,23	0,06	**0,11**	0,20	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LDJ
.E..LD	0,09	**0,18**	0,30	0,07	**0,14**	0,22	0,06	**0,12**	0,19	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LD
.S..GE	0,17	**0,2**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GE
.S..GD	0,17	**0,2**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GD
.E..HD	0,17	**0,25**	0,38	0,13	**0,19**	0,29	0,11	**0,17**	0,25	0,10	**0,16**	0,23	0,10	**0,15**	0,23	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

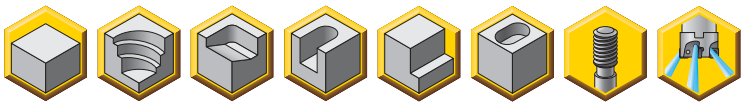
Application Examples

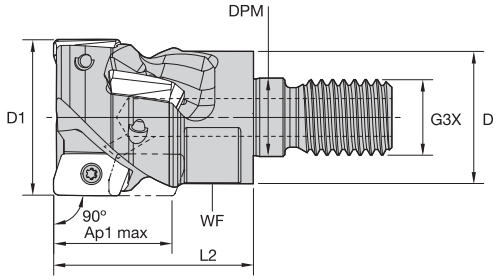


insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	min hole diameter (DH min)	min flat-bottom hole diameter (DH1 min)	max diameter (no flat bottom)
Mill-1, 10mm	12	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	16	9,7°	12,3°	19,50	28,73	32
Mill-1, 10mm	18	7,6°	9,6°	23,29	32,68	63
Mill-1, 10mm	20	6,2°	8,6°	27,25	36,63	40
Mill-1, 10mm	22	5,2°	7,0°	31,25	40,63	44
Mill-1, 10mm	25	4,2°	5,3°	37,26	46,62	50
Mill-1, 10mm	28	3,5°	4,3°	43,26	52,62	56
Mill-1, 10mm	32	2,8°	3,3°	51,27	60,62	64
Mill-1, 10mm	40	2,0°	2,3°	67,30	76,61	80
Mill-1, 10mm	42	1,9°	2,1°	71,32	80,60	82
Mill-1, 10mm	50	1,5°	1,6°	87,53	96,86	100
Mill-1, 10mm	63	1,2°	1,2°	113,54	122,86	126
Mill-1, 10mm	80	0,9°	0,9°	147,54	156,85	160
Mill-1, 10mm	100	0,7°	0,7°	187,54	196,85	200

NOTE: Max ramp angle decreases as nose radius increases.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Screw-On

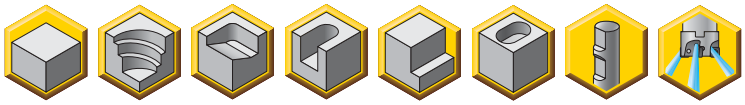
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773810	**M1H20J02R28M10ED10C4**	20	18	10,5	M10	32	15	18,9	4	2	6.0°	0,49	37100
3773811	**M1H25J02R32M12ED10C4**	25	21	12,5	M12	32	17	18,8	4	2	4.0°	0,07	33200
3773812	**M1H32J02R40M16ED10C4**	32	29	17,0	M16	40	24	18,7	4	2	2.8°	0,19	29300
3773813	**M1H32J03R40M16ED10C6**	32	29	17,0	M16	40	24	18,7	6	3	2.8°	0,18	29300

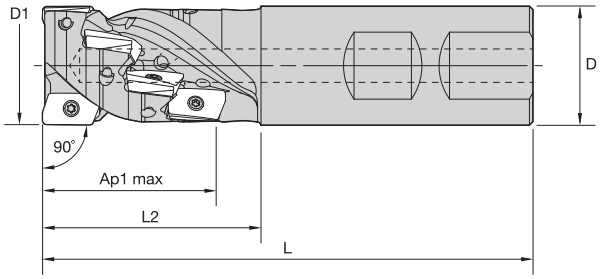
Spare Parts

D1	insert screw	Nm	Torx wrench
20	**MS2205**	1,0	**F7IP**
25	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Weldon® Shank

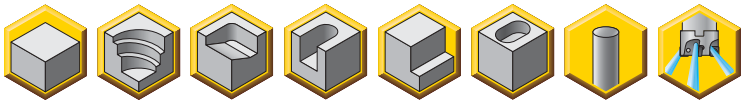
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773118	**M1H20J02R36B20ED10C6**	20	20	87	36	27,7	6	2	6.0°	0,34	37100
3773119	**M1H25J02R46B25ED10C8**	25	25	103	46	36,4	8	2	4.0°	0,29	33200
3773120	**M1H32J02R54B32ED10C10**	32	32	115	54	44,8	10	2	2.8°	0,56	29300
3773121	**M1H32J03R54B32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300

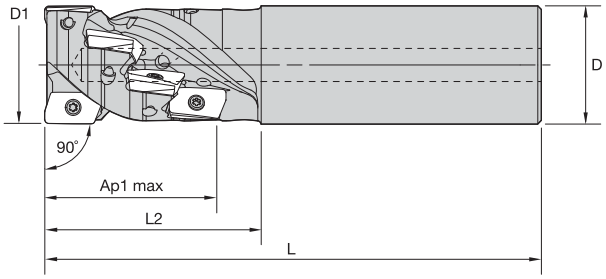
Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

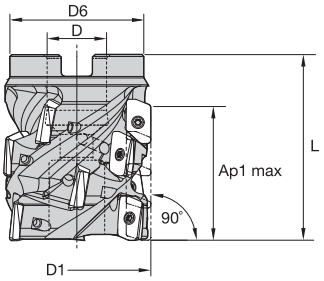
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical End Mills • Cylindrical Shank

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773806	**M1H20J02R28A20ED10C4**	20	20	110	28	18,9	4	2	6.0°	0,48	37100
3773122	**M1H20J02R36A20ED10C6**	20	20	90	36	27,7	6	2	6.0°	0,36	37100
3773807	**M1H25J02R28A25ED10C4**	25	25	120	28	18,8	4	2	4.0°	0,38	33200
3773803	**M1H25J02R46A25ED10C8**	25	25	105	46	36,4	8	2	4.0°	0,30	33200
3773804	**M1H32J02R54A32ED10C10**	32	32	115	54	44,8	10	2	2.8°	0,56	29300
3773805	**M1H32J03R54A32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300
3773808	**M1H32J02R28A32ED10C4**	32	32	130	28	18,7	4	2	2.8°	0,72	29300
3773809	**M1H32J03R28A32ED10C6**	32	32	130	28	18,7	6	3	2.8°	0,71	29300



Helical End Mills • Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773814	**M1H40T03R50A16ED10C12**	40	16	37	50	35,9	12	3	2.0°	0,27	26200
3773815	**M1H40T05R50A16ED10C20**	40	16	37	50	35,9	20	5	2.0°	0,26	26200
3773816	**M1H50T03R60A22ED10C15**	50	22	44	60	44,3	15	3	1.5°	0,62	23400
3773817	**M1H50T05R60A22ED10C25**	50	22	44	60	44,3	25	5	1.5°	0,55	23400

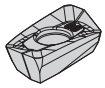
Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**
40	**MS2205**	1,0	**DT7IP**
50	**MS2205**	1,0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–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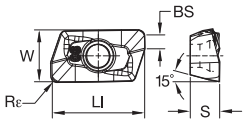


beyond

● first choice
○ alternate choice

	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P				○		○	●		●	●	
M						●	●		○	○	
K				●	●	○		●	○	○	
N	●	●	●	○							●
S						●	●				
H											

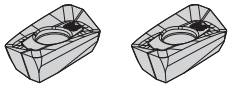
EDCT-F.LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDFRLDJ	12,05	6,75	3,75	2,29	0,2	0,02	2	●	●									
EDCT10T304PDFRLDJ	12,05	6,75	3,75	1,98	0,4	0,02	2	●	●									
EDCT10T308PDFRLDJ	12,05	6,74	3,75	1,70	0,8	0,02	2	●	●									
EDCT10T312PDFRLDJ	12,06	6,74	3,75	1,30	1,2	0,02	2	●	●									
EDCT10T316PDFRLDJ	12,06	6,74	3,75	0,90	1,6	0,02	2	●	●									
EDCT10T320PDFRLDJ	12,06	6,73	3,75	0,49	2,0	0,02	2	●	●									
EDCT10T324PDFRLDJ	12,06	6,73	3,75	0,11	2,4	0,02	2	●	●									
EDCT10T331PDFRLDJ	11,52	6,71	3,75	–	3,1	0,02	2	●	●									

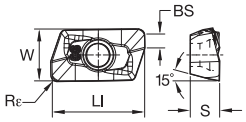
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



EDCT-E.LDJ EDCT-LD



beyond

● first choice
○ alternate choice

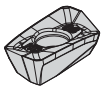
P				○		○	●		●	●			
M						●	●		○	○			
K				●	●	○		●	○	○			
N	●	●	●	○							●		
S						●	●						
H													

EDCT-E.LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T304PDERLDJ	12,05	6,75	3,75	1,98	0,4	0,03	2			●								
EDCT10T308PDERLDJ	12,05	6,74	3,75	1,70	0,8	0,03	2			●								
EDCT10T312PDERLDJ	12,06	6,74	3,75	1,30	1,2	0,03	2			●								
EDCT10T316PDERLDJ	12,06	6,74	3,75	0,90	1,6	0,03	2			●								
EDCT10T320PDERLDJ	12,06	6,73	3,75	0,49	2,0	0,03	2			●								
EDCT10T324PDERLDJ	12,06	6,73	3,75	0,11	2,4	0,03	2			●								
EDCT10T331PDERLDJ	11,52	6,71	3,75	–	3,1	0,03	2			●								

EDCT-LD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDCT10T302PDERLD	12,04	6,75	3,75	2,29	0,2	0,04	2						●	●		●	●	
EDCT10T304PDERLD	12,05	6,75	3,75	1,98	0,4	0,04	2				●	●	●	●		●	●	
EDCT10T308PDERLD	12,05	6,74	3,75	1,70	0,8	0,04	2				●	●	●	●	●	●	●	
EDCT10T312PDERLD	12,06	6,74	3,75	1,30	1,2	0,04	2					●	●	●			●	
EDCT10T316PDERLD	12,06	6,74	3,75	0,90	1,6	0,04	2					●	●	●			●	
EDCT10T320PDERLD	12,06	6,73	3,75	0,49	2,0	0,04	2						●	●			●	
EDCT10T324PDERLD	12,06	6,73	3,75	0,11	2,4	0,04	2						●	●			●	
EDCT10T331PDERLD	11,52	6,71	3,75	–	3,1	0,04	2					●	●	●		●	●	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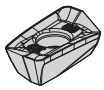
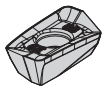
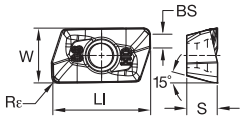

EDPT-S.GE


EDPT-S.GD



beyond

P						○	●		●	●		
M						●	●		○	○		
K					●	●	○		●	○	○	
N	●	●	●									●
S						●	●					
H												

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDERHD	12,05	6,75	3,75	2,07	0,4	0,08	2					●	●	●	●		●	
EDPT10T308PDERHD	12,05	6,74	3,75	1,70	0,8	0,08	2					●	●	●	●		●	
EDPT10T310PDERHD	12,05	6,74	3,75	1,49	1,0	0,08	2						●	●	●		●	
EDPT10T312PDERHD	12,06	6,74	3,75	1,30	1,2	0,08	2					●	●	●	●		●	
EDPT10T316PDERHD	12,06	6,74	3,75	0,90	1,6	0,08	2					●	●	●	●		●	
EDPT10T320PDERHD	12,06	6,74	3,75	0,49	2,0	0,08	2							●			●	
EDPT10T324PDERHD	12,06	6,74	3,75	0,11	2,4	0,08	2							●			●	
EDPT10T331PDERHD	11,52	6,71	3,75	–	3,1	0,08	2					●	●	●			●	

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGE	12,04	6,75	3,75	2,08	0,4	0,14	2						●	●			●	
EDPT10T308PDSRGE	12,05	6,74	3,75	1,70	0,8	0,14	2						●	●			●	
EDPT10T312PDSRGE	12,05	6,74	3,75	1,30	1,2	0,14	2						●	●			●	
EDPT10T316PDSRGE	12,06	6,74	3,75	0,90	1,6	0,14	2						●	●			●	
EDPT10T331PDSRGE	11,51	6,71	3,75	–	3,1	0,14	2						●	●			●	

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EDPT10T304PDSRGD	12,05	6,75	3,75	2,07	0,4	0,13	2					●		●	●		●	
EDPT10T308PDSRGD	12,05	6,74	3,75	1,70	0,8	0,13	2					●		●	●		●	
EDPT10T312PDSRGD	12,06	6,74	3,75	1,30	1,2	0,13	2					●		●	●		●	
EDPT10T316PDSRGD	12,06	6,74	3,75	0,90	1,6	0,13	2					●		●	●		●	

Recommended Starting Speeds [m/min]

Material Group		K313			KC410M			KC422M			KC510M			KC520M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	245	**200**	170	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	190	**170**	150	–	–	–	–	–	–	295	**265**	240	270	**245**	215
	2	–	–	–	–	–	–	–	–	–	230	**205**	190	210	**190**	175
	3	–	–	–	–	–	–	–	–	–	195	**175**	160	175	**160**	145
N	1–2	795	**695**	600	1215	**1080**	995	1075	**945**	875	640	**570**	525	–	–	–
	3	–	–	–	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	330	**285**	270	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	275	**240**	200	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	255	**215**	175	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	225	**185**	150	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	185	**170**	150	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	165	**125**	100	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	205	**180**	165	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	185	**160**	130	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	140	**120**	95	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	230	**205**	185	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	180	**160**	150	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	150	**135**	120	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	40	**35**	25	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	40	**35**	25	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	50	**40**	25	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	70	**50**	35	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,13**	0,23	0,06	**0,10**	0,18	0,06	**0,09**	0,15	0,05	**0,08**	0,14	0,05	**0,08**	0,14	.F..LDJ
.E..LDJ	0,08	**0,18**	0,30	0,06	**0,13**	0,23	0,06	**0,11**	0,20	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LDJ
.E..LD	0,09	**0,18**	0,30	0,07	**0,14**	0,22	0,06	**0,12**	0,19	0,05	**0,11**	0,18	0,05	**0,11**	0,18	.E..LD
.S..GE	0,17	**0,20**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GE
.S..GD	0,17	**0,20**	0,34	0,13	**0,15**	0,25	0,11	**0,13**	0,22	0,10	**0,12**	0,21	0,10	**0,12**	0,20	.S..GD
.E..HD	0,17	**0,25**	0,38	0,13	**0,19**	0,29	0,11	**0,17**	0,25	0,10	**0,16**	0,23	0,10	**0,15**	0,23	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

LOIS™ — Mill 1-14™

Load Optimised Insert Spacing with an Unmatched Soft Cutting Action

Boost productivity in all your complex contour milling and full slotting operations!

- Reduced cutting forces.
- Balanced cut.
- Reduced power fluctuation.
- Coolant through tool for machining exotic materials.
- Versatile cutting strategies:
  - Slot
  - Profile
  - Plunge
  - Ramp

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KENNAMETAL®

Mill 1-14™

Primary Application

Mill 1-14 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-14 cutters can be used for profiling, slotting, ramping, helical interpolation, circular interpolation, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-14 inserts also are specially designed to add cutting versatility. Innovative micro-geometry features contribute greatly to enhanced performance, various rake angles, negative T-land, and small hone. Results include significantly reduced cycle times and lower cutting forces. Test results in producing 90° walls have proven excellent as well; try GD2 geometry.

Features and Benefits

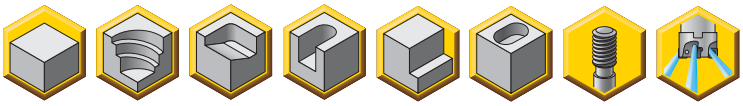
Features

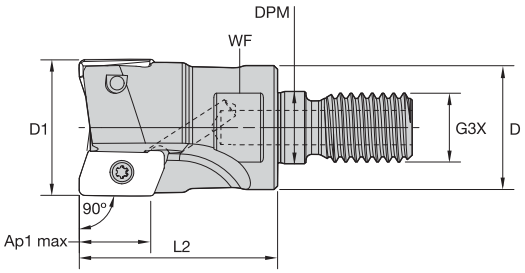
- Insert geometries and grades for most workpiece materials.
- Insert radii from 0,15mm (.016") up to 4mm (.157").
- Axial depth of cut up to 14mm (.551").
- Beyond™ grade technology.

Benefits

- Easy cutting action, kind on entry and also exiting the workpiece.
- Polished geometry for aluminium machining.
- Slotting, profiling, ramping, helical interpolation, and plunging.

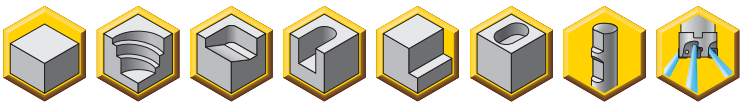
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.

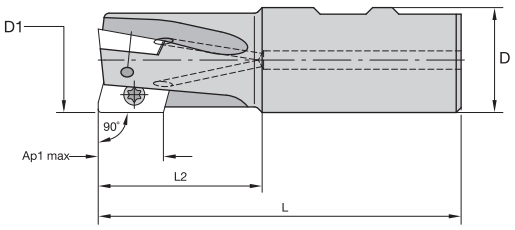




End Mills • Screw-On

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
2968370	**20A02R035M10SED14**	20	18	10,5	M10	35	15	14,7	2	16.8°	0,06	47500
2968371	**25A02R035M12SED14**	25	21	12,5	M12	35	17	14,6	2	10.7°	0,08	39700
3345679	**25A03R035M12SED14**	25	21	12,5	M12	35	17	14,6	3	10.7°	0,09	39700
2968372	**32A03R040M16SED14**	32	29	17,0	M16	40	22	14,6	3	7.0°	0,17	33300
3345680	**32A04R040M16SED14**	32	29	17,0	M16	40	22	14,6	4	7.0°	0,18	33300
2968373	**40A04R040M16SED14**	40	29	17,0	M16	40	22	14,4	4	5.1°	0,23	28700
3345681	**40A05R040M16SED14**	40	29	17,0	M16	40	22	14,4	5	5.1°	0,23	28700





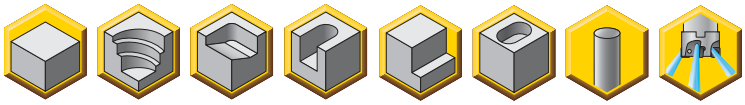
End Mills • Weldon® Shank

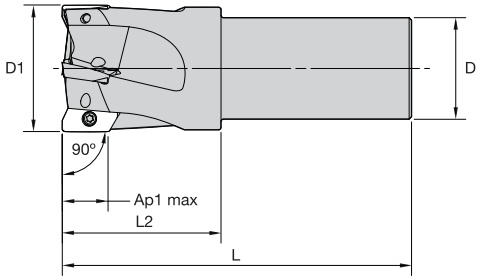
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2622232	**20A02R039B20SED14**	20	20	90	39	14,7	2	16.8°	0,17	47500
2623937	**25A02R044B25SED14**	25	25	100	44	14,6	2	10.7°	0,30	39700
2478640	**25A03R044B25SED14**	25	25	101	44	14,6	3	10.7°	0,30	39700
2623938	**32A03R050B32SED14**	32	32	110	50	14,5	3	7.0°	0,55	33300
2478642	**32A04R050B32SED14**	32	32	110	50	14,5	4	7.0°	0,56	33300
2623939	**40A04R050B32SED14**	40	32	110	50	14,4	4	5.1°	0,69	28700
2623933	**40A05R050B32SED14**	40	32	110	50	14,4	5	5.1°	0,69	28700

Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

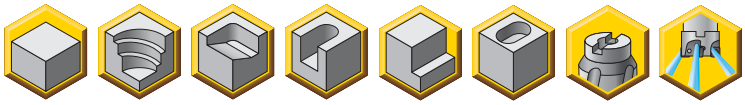
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3345674	**20A02R039A20SED14**	20	20	90	39	14,7	2	16.8°	0,17	47500
2968363	**20A02R050A20SED14-170**	20	20	170	50	14,7	2	16.8°	0,34	47500
3345675	**25A02R044A25SED14**	25	25	100	44	14,6	2	10.7°	0,30	39700
2968367	**25A02R050A25SED14-170**	25	25	170	50	14,6	2	10.7°	0,56	39700
3345676	**25A03R044A25SED14**	25	25	100	44	14,6	3	10.7°	0,31	39700
2968364	**25A03R050A25SED14-170**	25	25	170	50	14,6	3	10.7°	0,56	39700
3345677	**32A03R050A25SED14**	32	25	107	50	14,6	3	7.0°	0,39	33300
3345678	**32A04R050A25SED14**	32	25	107	50	14,6	4	7.0°	0,41	33300
3348765	**32A03R050A32SED14**	32	32	110	50	14,6	3	7.0°	0,55	33300
2968368	**32A03R050A32SED14-200**	32	32	200	50	14,6	3	7.0°	1,10	33300
3348766	**32A04R050A32SED14**	32	32	110	50	14,6	4	7.0°	0,56	33300
2968365	**32A04R050A32SED14-200**	32	32	200	50	14,6	4	7.0°	1,11	33300
3348767	**40A04R050A32SED14**	40	32	110	50	14,4	4	5.1°	0,69	28700
2968369	**40A04R050A32SED14-200**	40	32	200	50	14,4	4	5.1°	1,24	28700
3348768	**40A05R050A32SED14**	40	32	110	50	14,4	5	5.1°	0,70	28700
2968366	**40A05R050A32SED14-200**	40	32	200	50	14,4	5	5.1°	1,25	28700

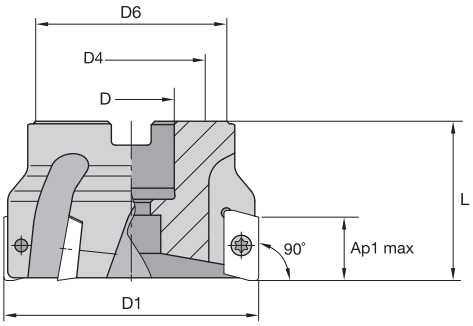
Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mills

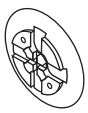
order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2623940	**40A04RS90ED14D**	40	16	–	37	40	14,4	4	5.1°	0,20	28700
2623934	**40A05RS90ED14D**	40	16	–	37	40	14,4	5	5.1°	0,20	28700
2623941	**50A05RS90ED14D**	50	22	–	45	40	14,3	5	3.8°	0,30	25000
2478686	**50A06RS90ED14D**	50	22	–	45	40	14,3	6	3.8°	0,29	25000
2623942	**63A06RS90ED14D**	63	22	–	50	40	14,3	6	2.8°	0,52	21800
2478689	**63A07RS90ED14D**	63	22	–	50	40	14,3	7	2.8°	0,53	21800
2623963	**80A07RS90ED14D**	80	27	–	60	50	14,2	7	2.1°	1,02	19000
2478690	**80A09RS90ED14D**	80	27	–	60	50	14,2	9	2.1°	1,08	19000
2623964	**100A08RS90ED14D**	100	32	–	80	50	14,2	8	1.7°	1,75	16800
2623935	**100A10RS90ED14D**	100	32	–	80	50	14,2	10	1.7°	1,86	16800
2510390	**125B09RS90ED14D**	125	40	–	90	63	14,2	9	1.3°	2,86	14900
2623936	**125B12RS90ED14D**	125	40	–	90	63	14,2	12	1.3°	3,01	14900
2623965	**160C11RS90ED14D**	160	40	66,7	100	63	14,2	11	1.0°	3,95	13100

Spare Parts





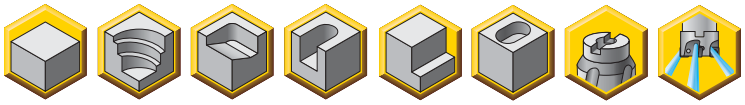


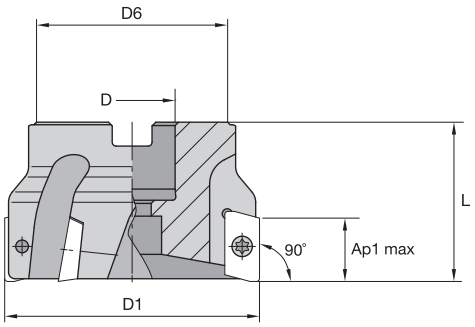


D1	insert screw	Nm	Torx Plus driver	mounting screw	lock screw	low-head cap screw with coolant groove	socket-head cap screw with coolant groove	coolant shower plate
40	**MS2166**	2,3	**DT9IP**	–	–	–	**MS1294CG**	–
40	**MS2166**	2,3	**DT9IP**	**MS1294**	–	–	–	–
50	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2072CG**	–
63	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2072CG**	–
80	**MS2166**	2,3	**DT9IP**	–	–	–	**MS2038CG**	–
100	**MS2166**	2,3	**DT9IP**	**MS1254**	–	–	–	–
100	**MS2166**	2,3	**DT9IP**	–	–	**MS1254CG**	–	–
125	**MS2166**	2,3	**DT9IP**	–	**420.200**	–	–	**470.232**
160	**MS2166**	2,3	**DT9IP**	–	**420.200**	–	–	**470.233**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mill • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3124210	**80A07RS90ED14D-J**	80	25,40	1.000	50	50	14	7	2.1°	0,99	19000
3124211	**80A09RS90ED14D-J**	80	25,40	1.000	50	50	14	9	2.1°	1,07	19000
3124223	**100B08RS90ED14D-J**	100	31,75	1.250	60	50	14	8	1.7°	1,40	16800
3124224	**100B10RS90ED14D-J**	100	31,75	1.250	60	50	14	10	1.7°	1,50	16800
3124226	**125B09RS90ED14D-J**	125	38,10	1.500	80	63	14	9	1.3°	2,89	14900
3124231	**125B12RS90ED14D-J**	125	38,10	1.500	80	63	14	12	1.3°	3,03	14900
3168172	**160B11RS90ED14D-J**	160	50,80	2.000	100	63	14	11	1.0°	3,98	13100
3168213	**160B15RS90ED14D-J**	160	50,80	2.000	100	63	14	15	1.0°	4,25	13100

Spare Parts





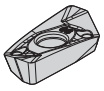

D1	insert screw	Nm	Torx Plus driver	lock screw	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw assembly
80	**MS2166**	2,3	**DT9IP**	**–**	**MS2038**	**MS2038CG**	**–**
100	**MS2166**	2,3	**DT9IP**	**–**	**–**	**–**	**MS2220C**
125	**MS2166**	2,3	**DT9IP**	**420.200**	**–**	**–**	**–**
160	**MS2166**	2,3	**DT9IP**	**–**	**–**	**–**	**–**

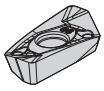
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

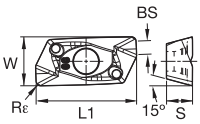
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	.S..GE	KC522M	**.E..HD**	**KC522M**	–	–

Indexable Inserts


EDCT-F.LDJ


EDCT-E.LDJ



● first choice
○ alternate choice

beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H					○			○	

EDCT-F.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140402PDFRLDJ	17,46	8,49	4,50	3,14	0,2	0,02	2	●							
EDCT140404PDFRLDJ	17,46	8,49	4,50	2,95	0,4	0,02	2	●							
EDCT140408PDFRLDJ	17,47	8,48	4,50	2,56	0,8	0,02	2	●							
EDCT140412PDFRLDJ	17,47	8,46	4,50	2,17	1,2	0,02	2	●							
EDCT140416PDFRLDJ	17,49	8,45	4,50	1,77	1,6	0,02	2	●							
EDCT140431PDFRLDJ	17,50	8,40	4,50	0,26	3,1	0,02	2	●							
EDCT140440PDFRLDJ	16,53	8,34	4,50	–	4,0	0,02	2	●							

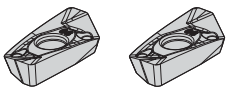
EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLDJ	17,46	8,49	4,50	2,95	0,4	0,03	2		●						
EDCT140408PDERLDJ	17,47	8,48	4,50	2,56	0,8	0,03	2		●						
EDCT140412PDERLDJ	17,48	8,46	4,50	2,17	1,2	0,03	2		●						
EDCT140416PDERLDJ	17,49	8,45	4,50	1,77	1,6	0,03	2		●						
EDCT140424PDERLDJ	17,50	8,42	4,50	0,99	2,4	0,03	2		●						
EDCT140431PDERLDJ	17,50	8,40	4,50	0,26	3,1	0,03	2		●						
EDCT140440PDERLDJ	16,53	8,34	4,50	–	4,0	0,03	2		●						

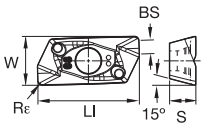
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	.S..GE	KC522M	**.E..HD**	**KC522M**	–	–

Indexable Inserts



EDCT-LD EDCT-E.GD



beyond

● first choice
○ alternate choice

	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

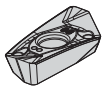
Shoulder Mills

EDCT-LD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLD	17,46	8,49	4,50	2,95	0,4	0,04	2				●				
EDCT140408PDERLD	17,47	8,48	4,50	2,56	0,8	0,04	2				●				
EDCT140412PDERLD	17,48	8,46	4,50	2,17	1,2	0,04	2				●				
EDCT140416PDERLD	17,49	8,45	4,50	1,77	1,6	0,04	2				●				
EDCT140431PDERLD	17,50	8,40	4,50	0,26	3,1	0,04	2				●				

EDCT-E.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERGD	17,46	8,49	4,50	2,95	0,4	0,05	2					●		●	
EDCT140408PDERGD	17,47	8,48	4,50	2,56	0,8	0,05	2					●		●	
EDCT140412PDERGD	17,48	8,46	4,50	2,17	1,2	0,05	2					●			
EDCT140416PDERGD	17,49	8,45	4,50	1,77	1,6	0,05	2					●			
EDCT140431PDERGD	17,50	8,40	4,50	0,26	3,1	0,05	2					●		●	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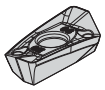
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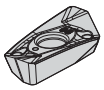
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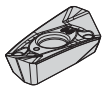
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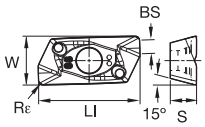


beyond

P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDERHD	17,46	8,39	4,50	2,95	0,4	0,08	2			●	●	●	●		●
EDPT140408PDERHD	17,47	8,38	4,50	2,56	0,8	0,08	2			●	●	●	●		●
EDPT140412PDERHD	17,48	8,36	4,50	2,16	1,2	0,08	2			●	●	●	●		●
EDPT140416PDERHD	17,49	8,36	4,50	1,77	1,6	0,08	2			●	●	●	●		●
EDPT140420PDERHD	17,49	8,35	4,50	1,37	2,0	0,08	2				●	●			●
EDPT140424PDERHD	17,50	8,32	4,50	0,99	2,4	0,08	2				●	●			●
EDPT140431PDERHD	17,51	8,30	4,50	0,26	3,1	0,08	2				●	●			●
EDPT140440PDERHD	16,53	8,26	4,50	–	4,0	0,08	2				●	●			●

EDPT-S.GE

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDSRGE	17,43	8,20	4,45	2,80	0,4	0,14	2				●	●		●	●
EDPT140408PDSRGE	17,44	8,17	4,45	2,39	0,8	0,14	2				●	●		●	●
EDPT140412PDSRGE	17,44	8,14	4,45	1,98	1,2	0,14	2				●	●			●
EDPT140416PDSRGE	17,45	8,12	4,45	1,58	1,6	0,14	2				●	●			●
EDPT140431PDSRGE	17,46	8,07	4,45	0,13	3,1	0,14	2				●	●		●	●

EDPT-S.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD	17,47	8,37	4,50	2,55	0,8	0,11	2			●		●			●
EDPT140412PDSRGD	17,48	8,36	4,50	2,17	1,2	0,11	2			●		●			●
EDPT140416PDSRGD	17,49	8,35	4,50	1,77	1,6	0,11	2			●		●			●

EDPT-S.GD2

catalogue number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD2	17,47	8,37	4,50	2,61	0,8	0,11	2			●		●			●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	120	**90**	70

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

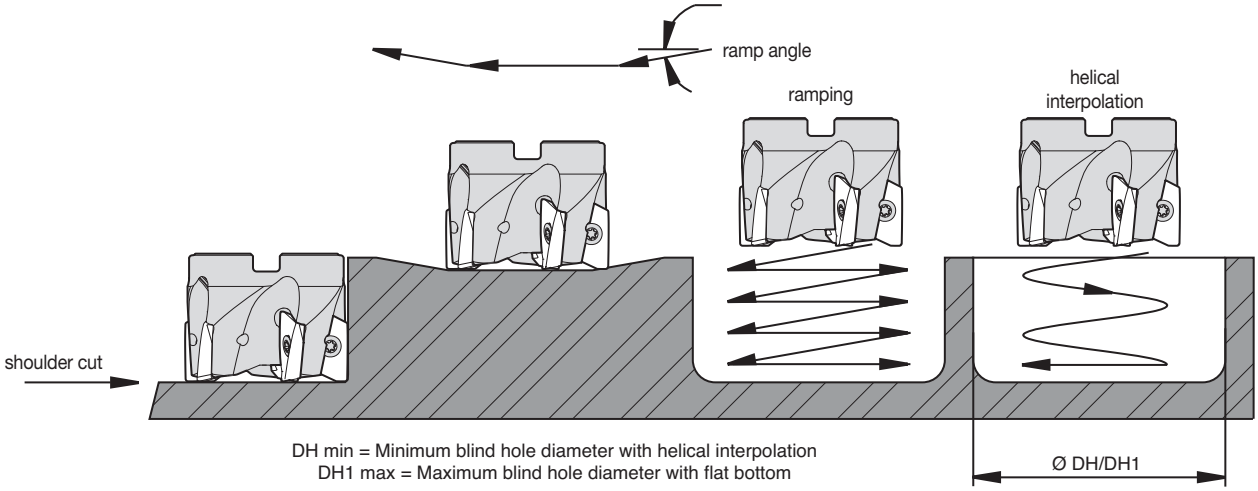
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,20**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,09	**0,20**	0,35	0,07	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LD
.E..GD	0,12	**0,27**	0,43	0,09	**0,20**	0,32	0,08	**0,18**	0,28	0,07	**0,17**	0,26	0,07	**0,16**	0,26	.E..GD
.S..GE	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GE
.S..GD	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GD
.S..GD2	0,17	**0,40**	0,58	0,13	**0,30**	0,43	0,11	**0,26**	0,38	0,10	**0,24**	0,35	0,10	**0,24**	0,35	.S..GD2
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter
Mill 1-14	20	16°	23,74	35,62	40
Mill 1-14	25	11°	33,75	44,44	50
Mill 1-14	32	7°	47,80	59,79	64
Mill 1-14	40	5°	63,76	75,22	80
Mill 1-14	40	5°	64,00	75,47	80
Mill 1-14	50	4°	83,96	96,05	100
Mill 1-14	63	3°	109,93	121,47	126
Mill 1-14	80	2°	143,91	155,47	160
Mill 1-14	100	1°	183,89	199,47	200
Mill 1-14	125	1°	233,88	245,47	250
Mill 1-14	160	1°	303,88	315,47	320

Mill 1-14™ Helical Cutters

Primary Application

The Mill 1-14 helical cutters will increase your axial depth of cut. Designed with axial support pins for added stability, the Mill 1-14 features our essential Load-Optimised Insert Spacing™ (LOIS) technology. LOIS dramatically minimises unwanted vibrations and fluctuations in power requirements, resulting in a much smoother-sounding cut. Up to nine different coolant nozzle diameters enable tailoring to suit each machine tool, providing remarkably consistent, focused coolant flow.

Features and Benefits

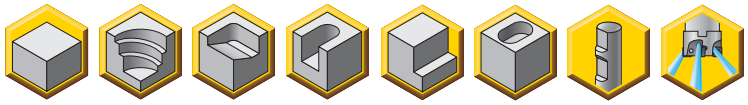
Functions

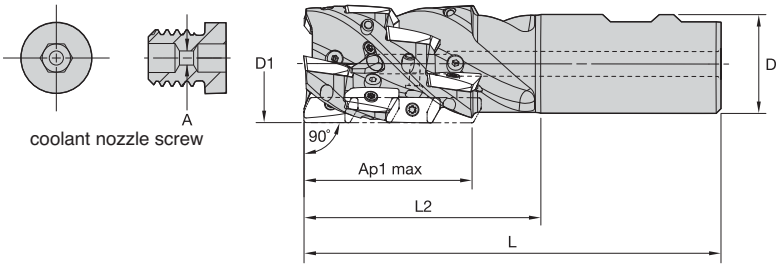
- Improves axial depth of cut better than standard end mills due to the positioning of inserts in helical configuration.
- Up to nine different coolant nozzle diameters tailored to suit each machine tool.
- One tool that offers features common to end mills, but rarely seen on a helical cutter: Helical ramping from solid, slotting, contouring, ramping, and plunging.

Benefits

- Increases depth of cut.
- Consistent, focused coolant flow.
- Built for performance, accuracy, and versatility.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.





Helical End Mills • Weldon® Shank • Slot and Profile

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3742932	M1H32J2R50B32S90ED14C4	32	32	111	50	27,8	4	2	5.4°	0,52	31100
3743033	M1H40J3R50B32S90ED14C6	40	32	111	50	27,6	6	3	3.8°	0,59	28400
3743034	M1H40J3R65B32S90ED14C9	40	32	126	65	40,8	9	3	3.8°	0,66	28400
3743035	M1H40J3R80B32S90ED14C12	40	32	141	80	54,0	12	3	3.8°	0,72	28400
3743038	M1H50J3R80B40S90ED14C12	50	40	151	80	53,5	12	3	2.7°	1,30	24600

Spare Parts




D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
32	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
50	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

NEW!

Helical Weldon Mills • Profile Only

order number	catalogue number	D1	D	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
5085631	M1H40J4R80B32S90ED14C12	40	32	141	40,8	12	4	3.8°	0,80	28400

Spare Parts




D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
40	MS2148PKG	2,3	DT9IP	ASPM07001802	MS2191C20

Optional Coolant Nozzle Screw

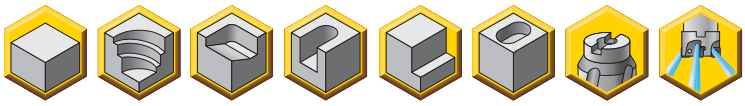
order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

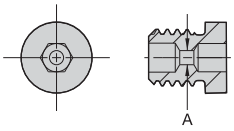
Coolant Nozzle Key

order number	catalogue number	drive size
1993552	THW2M	2 MM

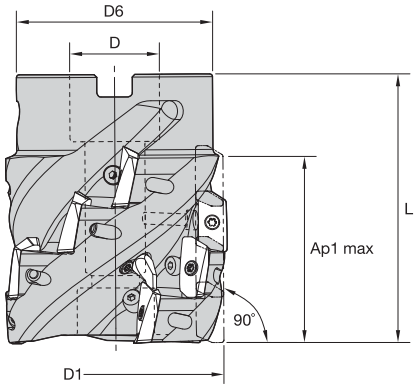
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility with coolant flow.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.





coolant nozzle screw



Helical Shell Mills • Slot and Profile

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3743036	M1H50T3R50A22S90ED14C6	50	22	46	50	27,4	6	3	2.7°	0,44	24600
3743037	M1H50T3R65A22S90ED14C9	50	22	46	65	40,4	9	3	2.7°	0,58	24600
3743039	M1H63T3R50A27S90ED14C6	63	27	60	50	27,0	6	3	2.0°	0,77	22000
3743040	M1H63T3R65A27S90ED14C9	63	27	60	65	39,9	9	3	2.0°	1,01	22000
3743042	M1H63T3R75A27S90ED14C12	63	27	60	75	52,8	12	3	2.0°	1,16	22000
3743041	M1H63T4R65A27S90ED14C12	63	27	60	65	39,9	12	4	2.0°	0,98	22000

Spare Parts





order number	Z	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3743036	6	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1235	MS2191C20
3743037	9	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1233	MS2191C16
3743039	6	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1198	MS2191C20
3743040	9	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1238	MS2191C20
3743042	12	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1433	MS2191C16
3743041	12	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1238	MS2191C16

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Helical Shell Mills • Profile Only

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3831819	M1H63T5R75A27S90ED14C20	63	27	60	75	52,8	20	5	2.0°	1,06	22000

Spare Parts





D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
63	MS2148PKG	2,3	DT9IP	ASPM07001802	MS1433	MS2191C12

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Optional Coolant Nozzle Screw

order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

Coolant Nozzle Key

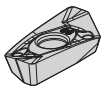
order number	catalogue number	drive size
1993552	THW2M	2 MM

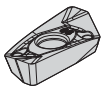
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm (.047") hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter. This gives flexibility with coolant flow.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts


EDCT-F.LDJ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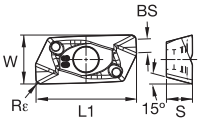


beyond

● first choice
○ alternate choice

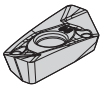
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H								

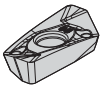
EDCT-F.LDJ

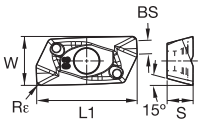
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140402PDFRLDJ	17,46	8,49	4,50	3,14	0,2	0,02	2	●							
EDCT140404PDFRLDJ	17,46	8,49	4,50	2,95	0,4	0,02	2	●							
EDCT140408PDFRLDJ	17,47	8,48	4,50	2,56	0,8	0,02	2	●							
EDCT140412PDFRLDJ	17,47	8,46	4,50	2,17	1,2	0,02	2	●							
EDCT140416PDFRLDJ	17,49	8,45	4,50	1,77	1,6	0,02	2	●							
EDCT140431PDFRLDJ	17,50	8,40	4,50	0,26	3,1	0,02	2	●							
EDCT140440PDFRLDJ	16,53	8,34	4,50	–	4,0	0,02	2	●							

EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLDJ	17,46	8,49	4,50	2,95	0,4	0,03	2		●						
EDCT140408PDERLDJ	17,47	8,48	4,50	2,56	0,8	0,03	2		●						
EDCT140412PDERLDJ	17,48	8,46	4,50	2,17	1,2	0,03	2		●						
EDCT140416PDERLDJ	17,49	8,45	4,50	1,77	1,6	0,03	2		●						
EDCT140424PDERLDJ	17,50	8,42	4,50	0,99	2,4	0,03	2		●						
EDCT140431PDERLDJ	17,50	8,40	4,50	0,26	3,1	0,03	2		●						
EDCT140440PDERLDJ	16,53	8,34	4,50	–	4,0	0,03	2		●						


EDCT-LD


EDCT-E.GD



beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H									

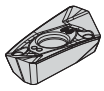
● first choice
○ alternate choice

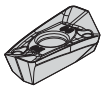
EDCT-LD

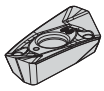
catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERLD	17,46	8,49	4,50	2,95	0,4	0,04	2				●				
EDCT140408PDERLD	17,47	8,48	4,50	2,56	0,8	0,04	2				●				
EDCT140412PDERLD	17,48	8,46	4,50	2,17	1,2	0,04	2				●				
EDCT140416PDERLD	17,49	8,45	4,50	1,77	1,6	0,04	2				●				
EDCT140431PDERLD	17,50	8,40	4,50	0,26	3,1	0,04	2				●				

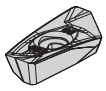
EDCT-E.GD

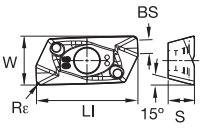
catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDCT140404PDERGD	17,46	8,49	4,50	2,95	0,4	0,05	2					●		●	
EDCT140408PDERGD	17,47	8,48	4,50	2,56	0,8	0,05	2					●		●	
EDCT140412PDERGD	17,48	8,46	4,50	2,17	1,2	0,05	2					●			
EDCT140416PDERGD	17,49	8,45	4,50	1,77	1,6	0,05	2					●			
EDCT140431PDERGD	17,50	8,40	4,50	0,26	3,1	0,05	2					●		●	


EDPT-E.HD


EDPT-S.GE


EDPT-S.GD


EDPT-S.GD2



beyond

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K				●	○		●	○	○
N		●	●						
S				●	●				
H									

● first choice
○ alternate choice

EDPT-E.HD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDERHD	17,46	8,39	4,50	2,95	0,4	0,08	2			●	●	●	●		●
EDPT140408PDERHD	17,47	8,38	4,50	2,56	0,8	0,08	2			●	●	●	●		●
EDPT140412PDERHD	17,48	8,36	4,50	2,16	1,2	0,08	2			●	●	●	●		●
EDPT140416PDERHD	17,49	8,36	4,50	1,77	1,6	0,08	2			●	●	●	●		●
EDPT140420PDERHD	17,49	8,35	4,50	1,37	2,0	0,08	2				●	●			●
EDPT140424PDERHD	17,50	8,32	4,50	0,99	2,4	0,08	2				●	●			●
EDPT140431PDERHD	17,51	8,30	4,50	0,26	3,1	0,08	2				●	●			●
EDPT140440PDERHD	16,53	8,26	4,50	–	4,0	0,08	2				●	●			●

EDPT-S.GE

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140404PDSRGE	17,43	8,20	4,45	2,80	0,4	0,14	2				●	●		●	●
EDPT140408PDSRGE	17,44	8,17	4,45	2,39	0,8	0,14	2				●	●		●	●
EDPT140412PDSRGE	17,44	8,14	4,45	1,98	1,2	0,14	2				●	●			●
EDPT140416PDSRGE	17,45	8,12	4,45	1,58	1,6	0,14	2				●	●			●
EDPT140431PDSRGE	17,46	8,07	4,45	0,13	3,1	0,14	2				●	●		●	●

EDPT-S.GD

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD	17,47	8,37	4,50	2,55	0,8	0,11	2			●		●			●
EDPT140412PDSRGD	17,48	8,36	4,50	2,17	1,2	0,11	2			●		●			●
EDPT140416PDSRGD	17,49	8,35	4,50	1,77	1,6	0,11	2			●		●			●

EDPT-S.GD2

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EDPT140408PDSRGD2	17,47	8,37	4,50	2,61	0,8	0,11	2			●		●			●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270
	2	–	–	–	–	–	–	–	–	–	275	**240**	200
	3	–	–	–	–	–	–	–	–	–	255	**215**	175
	4	–	–	–	–	–	–	–	–	–	225	**185**	150
	5	–	–	–	–	–	–	–	–	–	185	**170**	150
	6	–	–	–	–	–	–	–	–	–	165	**125**	100
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165
	2	–	–	–	–	–	–	–	–	–	185	**160**	130
	3	–	–	–	–	–	–	–	–	–	140	**120**	95
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25
	2	–	–	–	–	–	–	–	–	–	40	**35**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

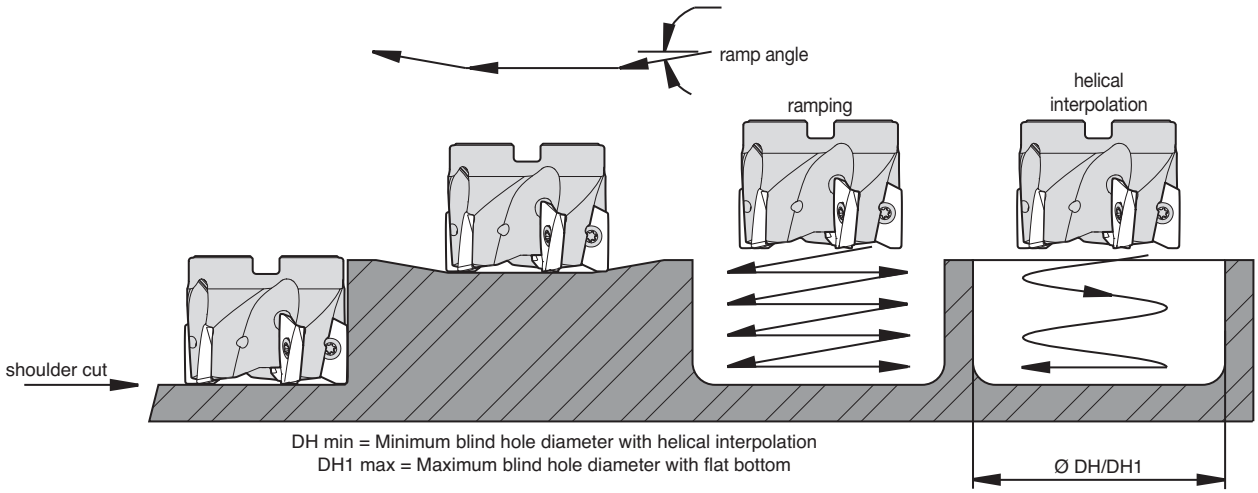
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,1**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,20**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,09	**0,20**	0,35	0,07	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LD
.E..GD	0,12	**0,27**	0,43	0,09	**0,20**	0,32	0,08	**0,18**	0,28	0,07	**0,17**	0,26	0,07	**0,16**	0,26	.E..GD
.S..GE	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GE
.S..GD	0,17	**0,34**	0,51	0,13	**0,26**	0,38	0,11	**0,22**	0,33	0,10	**0,21**	0,31	0,10	**0,21**	0,30	.S..GD
.S..GD2	0,17	**0,40**	0,58	0,13	**0,30**	0,43	0,11	**0,26**	0,38	0,10	**0,24**	0,35	0,10	**0,24**	0,35	.S..GD2
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

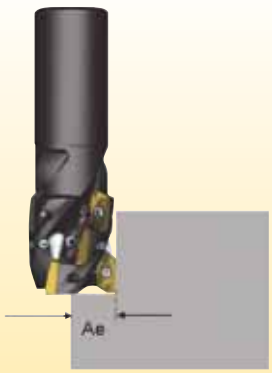
NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



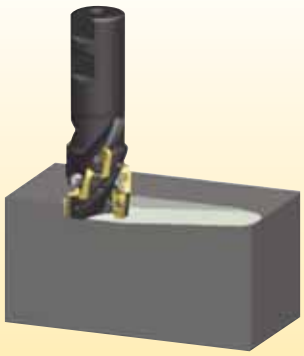
insert style	cutting diameter	max ramp angle	max hole diameter (DH min)	max flat-bottom hole diameter (DHl max)	max diameter
Mill 1-14	32	5.4°	47,80	59,79	64
Mill 1-14	40	3.8°	64,00	75,47	80
Mill 1-14	50	2.7°	83,96	96,05	100
Mill 1-14	63	1.9°	109,93	121,47	126

Best Machining Practices



Contouring/Profiling
Ae = up to 50% of cutter Ø. This can be used with or without coolant/air blast, depending on materials being machined.

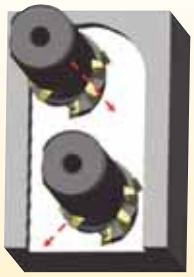
Slotting
Full width cutting or profiling over 50% of the cutter Ø. It is suggested to use coolant or air blast to evacuate chips. If necessary, reduce coolant nozzle hole size, which adds more pressure, and the chip is forced out of the chip gash.



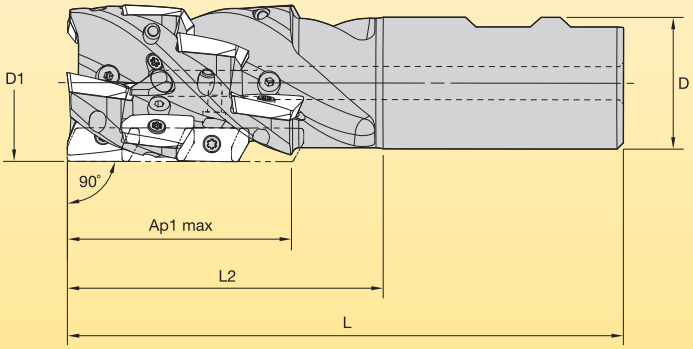
Ramping
Only machine to the depth of the first insert. Observe the ramping angles given in the catalogue.

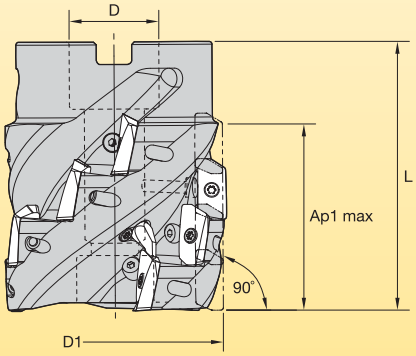
Slotting by Plunging

Slot with the alternate side method, alternating the cuts from side to side. This will enable the cutter to move away from the material prior to moving back up in the Z-axis. The cutter will not be in contact with the workpiece. Follow the direction of the arrows. Move 3 axes simultaneously into the centre of the slot. Maximum step over 8mm (.315").



With multiple Z-axis passes, when the final depth is achieved, move straight back up in the Z-axis, then repeat at the next step over.





LOIS™ Mill 1-14 Helical End Mills

	catalogue number	order number	D1	ZU [1]	Z	Mtg. [2]	D	L2	L	Ap1 max	max Ra [3]	max CR [4]	max RPM
Metric Cutters	M1H32J2R50B32S90ED14C4	3742932	32	2	4	W	32	50	111	27,8	5,4°	2,4	31100
	M1H40J3R50B32S90ED14C6	3743033	40	3	6	W	32	50	111	27,6	3,8°	2,4	28400
	M1H40J3R65B32S90ED14C9	3743034	40	3	9	W	32	65	126	40,8	3,8°	2,4	28400
	M1H40J4R80B32S90ED14C12	5085631	40	4	12	W	32	80	141	40,8	3,8°	2,5	28400
	M1H40J3R80B32S90ED14C12	3743035	40	3	12	W	32	80	141	54,0	3,8°	2,4	28400
	M1H50T3R50A22S90ED14C6	3743036	50	3	6	S	22	–	50	27,3	2,7°	2,4	24600
	M1H50T3R65A22S90ED14C9	3743037	50	3	9	S	22	–	65	40,4	2,7°	2,4	24600
	M1H50J3R80B40S90ED14C12	3743038	63	3	12	W	40	80	151	53,5	1,9°	2,4	24600
	M1H63T3R50A27S90ED14C6	3743039	63	3	6	S	27	–	50	27,0	1,9°	1,6	22000
	M1H63T3R65A27S90ED14C9	3743040	63	3	9	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T4R65A27S90ED14C12	3743041	63	4	12	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T3R75A27S90ED14C12	3743042	63	3	12	S	27	–	75	52,8	1,9°	1,6	22000
[5]	M1H63T5R75A27S90ED14C20	3831819	63	5	20	S	27	–	75	52,8	1,9°	1,6	22000
Inch Cutters	M1HR125E14W125Z2L200C4	3732889	1.25	2	4	W	1.25	2.00	4.28	1.09	5.4°	0.094	31100
	M1HR150E14W125Z3L200C6	3732890	1.50	3	6	W	1.25	2.00	4.28	1.09	4.0°	0.094	28400
	M1HR150E14W125Z3L250C9	3732891	1.50	3	9	W	1.25	2.50	4.78	1.61	4.0°	0.094	28400
	M1HR150E14W125Z3L300C12	3732892	1.50	3	12	W	1.25	3.00	5.28	2.13	4.0°	0.094	28400
	M1HR200E14S075Z3L200C6	3732933	2.00	3	6	S	0.75	–	2.00	1.07	2.6°	0.094	24600
	M1HR200E14S075Z3L250C9	3732934	2.00	3	9	S	0.75	–	2.50	1.59	2.6°	0.094	24600
	M1HR200E14W150Z3L300C12	3732935	2.00	3	12	W	1.50	3.00	5.69	2.10	2.6°	0.094	24600
	M1HR250E14S100Z3L200C6	3732936	2.50	3	6	S	1.00	–	2.00	1.06	1.9°	0.094	22000
	M1HR250E14S100Z3L250C9	3732937	2.50	3	9	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z4L250C12	3732938	2.50	4	12	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z3L300C12	3732939	2.50	3	12	S	1.00	–	3.00	2.07	1.9°	0.062	22000
[5]	M1HR250E14S100Z5L300C20	3786638	2.50	5	20	S	1.00	–	3.00	2.07	1.9°	0.062	22000

[1] Number of effective flutes.
[2] Mounting style: W = Weldon®; S = Shell mill.
[3] Max ramp angle when radial depth of cut exceeds 8mm (.31").
[4] Max insert corner radius allowed in first row without cutter body modification.
[5] Recommended for profiling applications only.

Profile, Slot, and Ramp

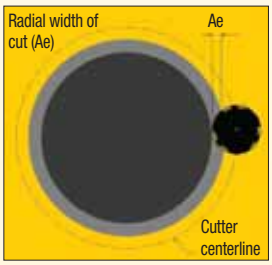
When taking a cut that equals up to 50% of the cutter diameter, you can operate without coolant, unless your material is coolant-dependent. When using more than 50% of the cutter diameter, there is a need to have coolant or an air blast through the nozzles. This will assist with chip evacuation. Please use the feed table when taking a small percentage of the cutter diameter. This will improve the volume of material removed. To achieve a superior surface finish on the base, adjust the feed to suit the finish required.

When using this cutter for plunging, the maximum suggested step over is 3,30mm (.130"). Always try to move the cutter and insert away from the material when retracting in the Z-axis. This can be done when employing the alternate cut method (zig zag method). Use a 3-axis move to get all axes moving at the same time, suggest 0,25mm (.010").

When machining a conventional slot, you have to move straight up in the Z-axis.

Circular and Helical Interpolation

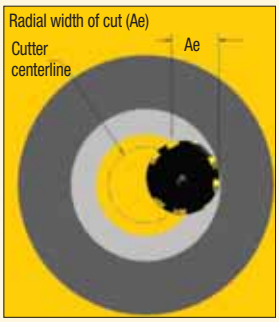
External



When profiling around the external part of a component, it is important to increase the feed rate. This will maintain the chip thickness value.
The programmed feed rate needs to be calculated at the cutter centerline.

For external profiling, adjust the feed rate for feed at the cutter centerline.
Increase the feed rate for external profiling.

Internal



When machining inside a component profile, the area of contact is larger.
The feed rate needs to be slower and at the centerline.

For internal profiling, adjust the feed rate for feed at the cutter centerline.
This will effectively reduce the feed rate as the distance traveled is less than the peripheral distance.

Cutting Data

Reference page P39 for both speed and feed data. Each insert has an average chip thickness value that will enable you to determine the feed per tooth.

Please remember when using less than 50% of the cutter diameter, the feed rate will need to be increased. Failure to do so will result in premature insert failure.

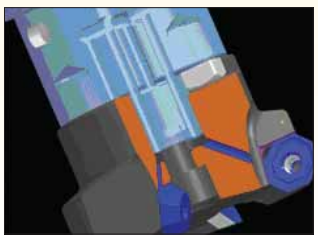
Running too slowly will reduce tool life.

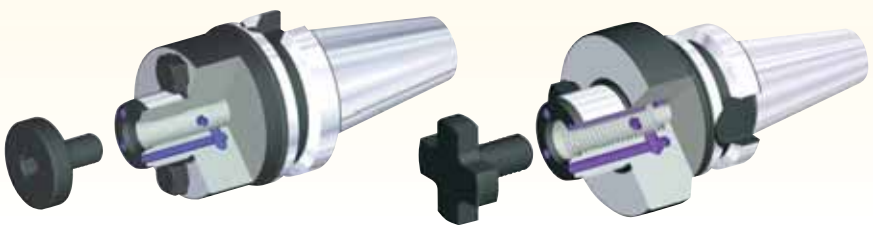
Spare Parts

Please make sure all the spare parts in the cutters are fully tightened prior to using the product.

Shell mill cutters no longer have coolant grooved bolts. We now have adaptors that will enable the coolant to be fed through the adaptor pilot diameter.

True Through Coolant Shell Mill Adaptors





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Superior Gripping

For bearing milling chucks when grip counts.
ERICKSON — the industry name you can trust.

- Heavy- and fine-milling applications.
- Great accuracy ≤5µm (.0002") at 3 x D and best gripping system.
- Pre-balanced to high specifications.
- Versatile as a collet chuck with the use of reduction sleeves.

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www.kennametal.com

KENNAMETAL®

Mill 1-18™

Primary Application

Mill 1-18 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-18 cutters can be used for profiling, slotting, ramping, helical interpolation, plunging, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-18 inserts also are specially designed to add cutting versatility, especially for larger axial depths of cut. Results include significantly reduced cycle times and lower cutting forces.

Features and Benefits

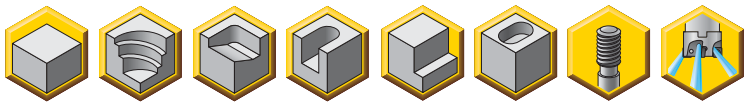
Features

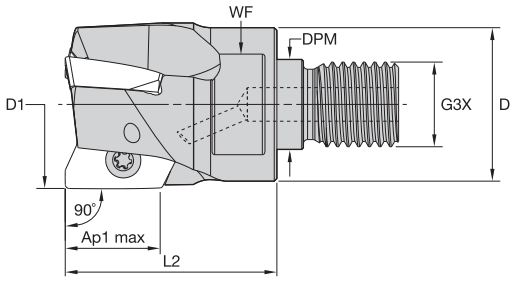
- Inserts for larger axial depth of cut.
- Inserts radii up to 6,35mm (.250").
- Axial depth of cut up to 18mm (.708").
- Cutter diameters up to 160mm (8").
- Beyond™ grade technology.

Benefits

- Slotting, profiling, ramping, helical interpolation, and plunging.
- Angled screw for insert retention.
- Insert geometries and grades for most workpiece materials.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Screw-On

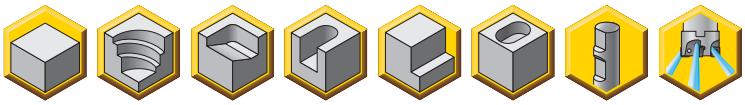
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3349690	**25A02R035M12SED18**	25	21	12,5	M12	35	17	18,0	2	17.0°	0,07	37380
3349691	**32A02R040M16SED18**	32	29	17,0	M16	40	22	18,0	2	10.5°	0,17	32140
3349692	**32A03R040M16SED18**	32	29	17,0	M16	40	22	18,0	3	10.5°	0,16	32140
3349773	**40A03R040M16SED18**	40	29	17,0	M16	40	22	17,8	3	7.5°	0,21	28220
3349774	**40A04R040M16SED18**	40	29	17,0	M16	40	22	17,8	4	7.5°	0,20	28220

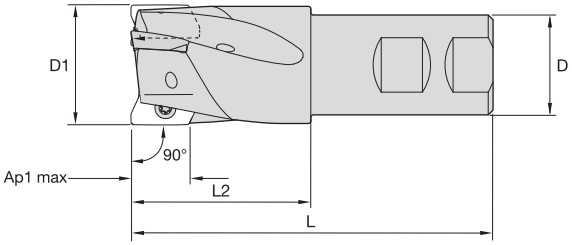
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2126**	4,0	**DT15IP**
32	**MS2126**	4,0	**DT15IP**
40	**MS2126**	4,0	**DT15IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Weldon® Shank

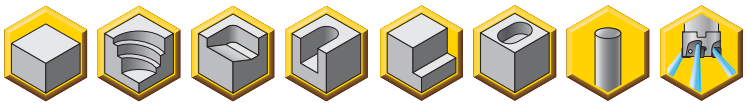
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2390446	**25A02R044B25SED18**	25	25	100	44	18,0	2	17.0°	0,29	37380
2390448	**32A03R050B32SED18**	32	32	110	50	18,0	3	10.5°	0,54	32140
2417191	**40A03R050B32SED18**	40	32	110	50	17,8	3	7.5°	0,67	28220
2390450	**40A04R050B32SED18**	40	32	110	50	17,8	4	7.5°	0,64	28220

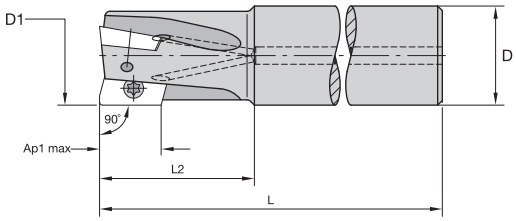
Spare Parts

D1	insert screw	Nm	Torx Plus wrench
25	**MS2126**	4,0	**TTP15**
32	**MS2126**	4,0	**TTP15**
40	**MS2126**	4,0	**TTP15**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





End Mills • Cylindrical Shank

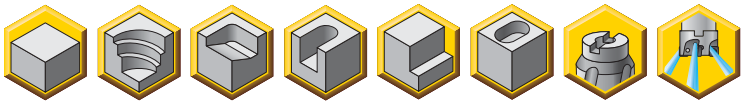
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3349685	25A02R044A25SED18	25	25	100	44	18,0	2	17.0°	0,30	37380
2963873	25A02R044A25SED18-150	25	25	150	44	17,9	2	17.0°	0,48	37380
2613785	25A02R050A25SED18-170	25	25	170	50	18,0	2	17.0°	0,55	37380
3349689	32A03R050A25SED18	32	25	107	50	18,0	3	10.5°	0,39	32140
2613788	32A02R050A32SED18-200	32	32	200	50	18,0	2	10.5°	1,11	32140
3349686	32A03R050A32SED18	32	32	110	50	18,0	3	10.5°	0,55	32140
2613786	32A03R050A32SED18-200	32	32	200	50	18,0	3	10.5°	1,09	32140
2963874	34A03R050A32SED18-250	34	32	250	50	17,9	3	9.5°	1,42	31210
3349687	40A03R050A32SED18	40	32	110	50	17,8	3	7.5°	0,68	28220
2613789	40A03R050A32SED18-200	40	32	200	50	17,8	3	7.5°	1,22	28220
2963875	40A03R050A32SED18-250	40	32	250	50	17,9	3	7.5°	1,47	28220
3349688	40A04R050A32SED18	40	32	110	50	17,8	4	7.5°	0,65	28220
2613787	40A04R050A32SED18-200	40	32	200	50	17,8	4	7.5°	1,19	28220
2963876	40A04R050A32SED18-250	40	32	250	50	17,9	4	7.5°	1,47	28220

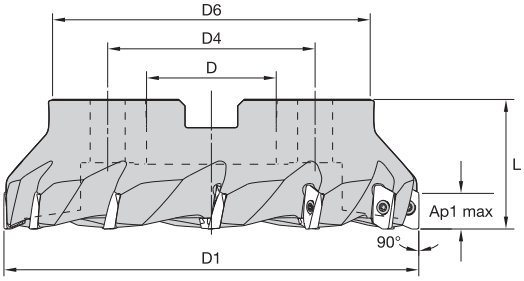
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS2126	4,0	DT15IP
32	MS2126	4,0	DT15IP
40	MS2126	4,0	DT15IP

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





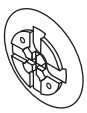
Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2417185	**50A04RS90ED18D**	50	22	–	45	40	17,7	4	5.0°	0,28	24890
2417183	**50A05RS90ED18D**	50	22	–	45	40	17,7	5	5.0°	0,28	24890
2417186	**63A05RS90ED18D**	63	22	–	50	40	17,6	5	4.0°	0,51	21910
2390483	**63A06RS90ED18D**	63	22	–	50	40	17,6	6	4.0°	0,50	21910
2417187	**80A06RS90ED18D**	80	27	–	60	50	17,5	6	3.0°	1,03	19270
2417184	**80A07RS90ED18D**	80	27	–	60	50	17,5	7	3.0°	1,07	19270
2417188	**100A07RS90ED18D**	100	32	–	80	50	17,5	7	2.0°	1,77	17120
2390485	**100A08RS90ED18D**	100	32	–	80	50	17,5	8	2.0°	1,86	17120
2417189	**125B08RS90ED18D**	125	40	–	90	63	17,5	8	1.5°	3,08	15230
2390486	**125B09RS90ED18D**	125	40	–	90	63	17,5	9	1.5°	3,24	15230
2417190	**160C10RS90ED18D**	160	40	66,7	100	63	17,5	10	1.2°	4,15	13400
2390487	**160C12RS90ED18D**	160	40	66,7	100	63	17,5	12	1.2°	4,46	13400

Spare Parts








D1	insert screw	Nm	Torx Plus wrench	mounting screw	mounting screw	coolant cap	mill cutter lock screw
50	**MS2126**	4,0	**TTP15**	**–**	**129.025**	**–**	**–**
63	**MS2126**	4,0	**TTP15**	**–**	**129.025**	**–**	**–**
80	**MS2126**	4,0	**TTP15**	**MS2038**	**–**	**470.233**	**–**
100	**MS2126**	4,0	**TTP15**	**MS1254**	**–**	**–**	**–**
125	**MS2126**	4,0	**TTP15**	**–**	**–**	**470.232**	**420.200**
160	**MS2126**	4,0	**TTP15**	**–**	**–**	**470.233**	**420.200**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Looking for a product that's not shown in this catalogue?

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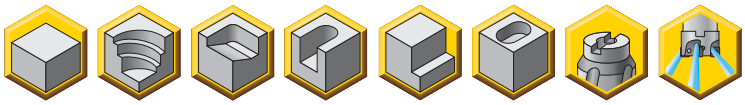
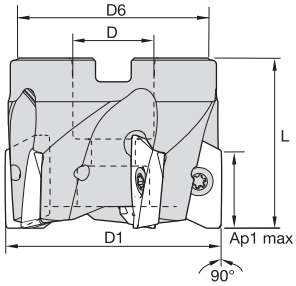
Visit **http://www.kennametal.com/milling/** to browse our electronic catalogue any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalogue is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL

- Japanese Industry Standards (JIS) have metric cutter diameters with inch bore sizes.
- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mill • JIS

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2963877	**80A06RS90ED18D-J**	80	25,40	1.000	54	50	18,0	6	3.0°	0,93	19270
2963882	**80A07RS90ED18D-J**	80	25,40	1.000	54	50	18,0	7	3.0°	0,91	19270
2963878	**100B07RS90ED18D-J**	100	31,75	1.250	64	50	18,0	7	2.0°	1,24	17120
2963904	**100B08RS90ED18D-J**	100	31,75	1.250	64	50	18,0	8	2.0°	1,22	17120
2963880	**125B08RS90ED18D-J**	125	38,10	1.500	84	63	18,0	8	1.5°	2,56	15230
2963906	**125B09RS90ED18D-J**	125	38,10	1.500	84	63	18,0	9	1.5°	2,57	15230
2963881	**160B10RS90ED18D-J**	160	50,80	2.000	104	63	18,0	10	1.2°	4,17	13400
2963907	**160B12RS90ED18D-J**	160	50,80	2.000	104	63	18,0	12	1.2°	4,17	13400

Spare Parts



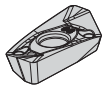
D1	insert screw	Nm	Torx Plus wrench	mounting screw
80	**MS2126**	4,0	**TTP15**	**–**
100	**MS2126**	4,0	**TTP15**	**MS1297**
125	**MS2126**	4,0	**TTP15**	**MS1297**
160	**MS2126**	4,0	**TTP15**	**MS1297**

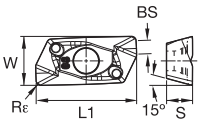
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts


EDCT-F.LDJ



beyond

	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P				○		●		●	●
M				●	●	●		○	○
K			●	○			●	○	○
N	●	●							
S				●	●	●			
H				○				○	

● first choice
○ alternate choice

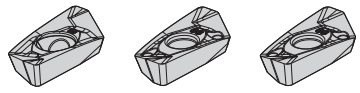
EDCT-F.LDJ

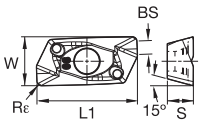
catalogue number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180504PDFRLDJ	21,75	10,98	5,50	3,07	0,4	0,02	2	●								
EDCT180508PDFRLDJ	21,76	10,97	5,50	2,69	0,8	0,02	2	●								
EDCT180512PDFRLDJ	21,77	10,97	5,50	2,29	1,2	0,02	2	●								
EDCT180516PDFRLDJ	21,78	10,96	5,50	1,90	1,6	0,02	2	●								
EDCT180520PDFRLDJ	21,79	10,95	5,50	1,49	2,0	0,02	2	●								
EDCT180524PDFRLDJ	21,79	10,93	5,50	1,11	2,4	0,02	2	●								
EDCT180532PDFRLDJ	21,79	10,91	5,50	0,32	3,2	0,02	2	●								
EDCT180540PDFRLDJ	20,78	10,87	5,50	–	4,0	0,02	2	●								
EDCT180548PDFRLDJ	20,20	10,83	5,50	–	4,8	0,02	2	●								
EDCT180550PDFRLDJ	19,95	10,81	5,50	–	5,0	0,02	2	●								
EDCT180564PDFRLDJ	18,72	10,73	5,50	–	6,4	0,02	2	●								

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts


EDCT-E.LDJ EDCT-LD EDCT-E.GD



beyond

● first choice
○ alternate choice

		KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P					○		●		●	●
M					●	●	●		○	○
K				●	○			●	○	○
N		●	●							
S					●	●	●			
H					○				○	

EDCT-E.LDJ

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180508PDERLDJ	21,76	10,97	5,50	2,69	0,8	0,03	2		●							
EDCT180512PDERLDJ	21,77	10,97	5,50	2,29	1,2	0,03	2		●							
EDCT180516PDERLDJ	21,78	10,96	5,50	1,90	1,6	0,03	2		●							
EDCT180524PDERLDJ	21,79	10,93	5,50	1,11	2,4	0,03	2		●							
EDCT180532PDERLDJ	21,79	10,91	5,50	0,32	3,2	0,03	2		●							
EDCT180540PDERLDJ	20,78	10,87	5,50	–	4,0	0,03	2		●							
EDCT180548PDERLDJ	20,20	10,83	5,50	–	4,8	0,03	2		●							
EDCT180564PDERLDJ	18,72	10,73	5,50	–	6,4	0,03	2		●							

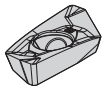
EDCT-LD

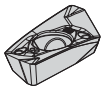
catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180508PDERLD	21,76	10,97	5,50	2,69	0,8	0,05	2				●					
EDCT180516PDERLD	21,78	10,96	5,50	1,90	1,6	0,05	2				●					
EDCT180532PDERLD	21,79	10,91	5,50	0,32	3,2	0,05	2				●					
EDCT180540PDERLD	20,78	10,87	5,50	–	4,0	0,05	2				●					
EDCT180548PDERLD	20,20	10,83	5,50	–	4,8	0,05	2				●					
EDCT180564PDERLD	18,72	10,73	5,50	–	6,4	0,05	2				●					

EDCT-E.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDCT180504PDERGD	21,75	10,98	5,50	3,07	0,4	0,09	2						●			
EDCT180508PDERGD	21,76	10,97	5,50	2,69	0,8	0,09	2						●		●	
EDCT180512PDERGD	21,77	10,97	5,50	2,29	1,2	0,09	2						●			

Shoulder Mills


EDPT-E.GD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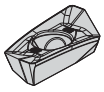
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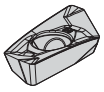
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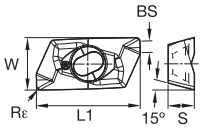


beyond

P					○		●		●	●
M					●	●	●		○	○
K				●	○			●	○	○
N	●	●								
S					●	●	●			
H					○				○	

● first choice
○ alternate choice

EDPT-E.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDERGD	21,76	10,97	5,50	2,69	0,8	0,09	2			●		●	●			●
EDPT180512PDERGD	21,77	11,00	5,50	2,29	1,2	0,09	2						●			
EDPT180516PDERGD	21,78	10,94	5,50	1,90	1,6	0,09	2			●	●	●	●			●
EDPT180524PDERGD	21,79	10,93	5,50	1,11	2,4	0,09	2						●			
EDPT180532PDERGD	21,79	10,91	5,50	0,32	3,2	0,09	2			●	●	●	●			●
EDPT180548PDERGD	20,20	10,83	5,50	–	4,8	0,09	2				●	●	●			
EDPT180564PDERGD	18,79	10,73	5,50	–	6,4	0,09	2				●	●	●			●

EDPT-E.HD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDERHD	21,77	10,89	5,50	2,69	0,8	0,08	2						●			●
EDPT180512PDERHD	21,77	10,88	5,50	2,29	1,2	0,08	2						●			●
EDPT180516PDERHD	21,78	10,87	5,50	1,90	1,6	0,08	2						●			●
EDPT180532PDERHD	21,79	10,83	5,50	0,31	3,2	0,08	2						●			●
EDPT180540PDERHD	20,92	10,77	5,50	–	4,0	0,08	2						●			●
EDPT180548PDERHD	20,16	10,75	5,50	–	4,8	0,08	2						●			●
EDPT180564PDERHD	18,79	10,66	5,50	–	6,4	0,08	2						●			●

EDPT-S.GE

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDSRGE	21,73	10,70	5,45	2,42	0,8	0,14	2				●		●		●	●
EDPT180512PDSRGE	21,77	10,68	5,45	2,00	1,2	0,14	2				●		●		●	●
EDPT180516PDSRGE	21,74	10,66	5,45	1,59	1,6	0,14	2				●		●		●	●
EDPT180532PDSRGE	21,75	10,62	5,45	0,07	3,2	0,14	2				●		●		●	●

EDPT-S.GD

catalogue number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EDPT180508PDSRGD	21,76	10,90	5,50	2,69	0,8	0,15	2						●	●		●
EDPT180512PDSRGD	21,77	10,89	5,50	2,29	1,2	0,15	2						●	●		●
EDPT180516PDSRGD	21,78	10,88	5,50	1,90	1,6	0,15	2						●	●		●
EDPT180532PDSRGD	21,79	10,83	5,50	0,32	3,2	0,15	2						●			●
EDPT180548PDSRGD	20,20	10,75	5,49	–	4,8	0,13	2						●			
EDPT180564PDSRGD	18,77	10,64	5,50	–	6,4	0,13	2						●			

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC422M			KC520M			KC522M			KC525M		
P	1	–	–	–	–	–	–	–	–	–	330	**285**	270	220	**200**	180
	2	–	–	–	–	–	–	–	–	–	275	**240**	200	180	**160**	150
	3	–	–	–	–	–	–	–	–	–	255	**215**	175	160	**150**	140
	4	–	–	–	–	–	–	–	–	–	225	**185**	150	140	**130**	120
	5	–	–	–	–	–	–	–	–	–	185	**170**	150	150	**140**	130
	6	–	–	–	–	–	–	–	–	–	165	**125**	100	130	**120**	110
M	1	–	–	–	–	–	–	–	–	–	205	**180**	165	150	**140**	130
	2	–	–	–	–	–	–	–	–	–	185	**160**	130	130	**120**	110
	3	–	–	–	–	–	–	–	–	–	140	**120**	95	90	**80**	70
K	1	–	–	–	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	1075	**945**	875	–	–	–	–	–	–	–	–	–
	3	1080	**995**	915	945	**875**	760	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**35**	25	60	**55**	50
	2	–	–	–	–	–	–	–	–	–	40	**35**	25	60	**55**	50
	3	–	–	–	–	–	–	–	–	–	50	**40**	25	50	**45**	40
	4	–	–	–	–	–	–	–	–	–	70	**50**	35	60	**50**	40
H	1	–	–	–	–	–	–	–	–	–	120	**90**	70	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	60	**45**	30	–	–		–	–	–	–	–	–
H	1	–	–	–	–	–	–	140	**115**	95	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

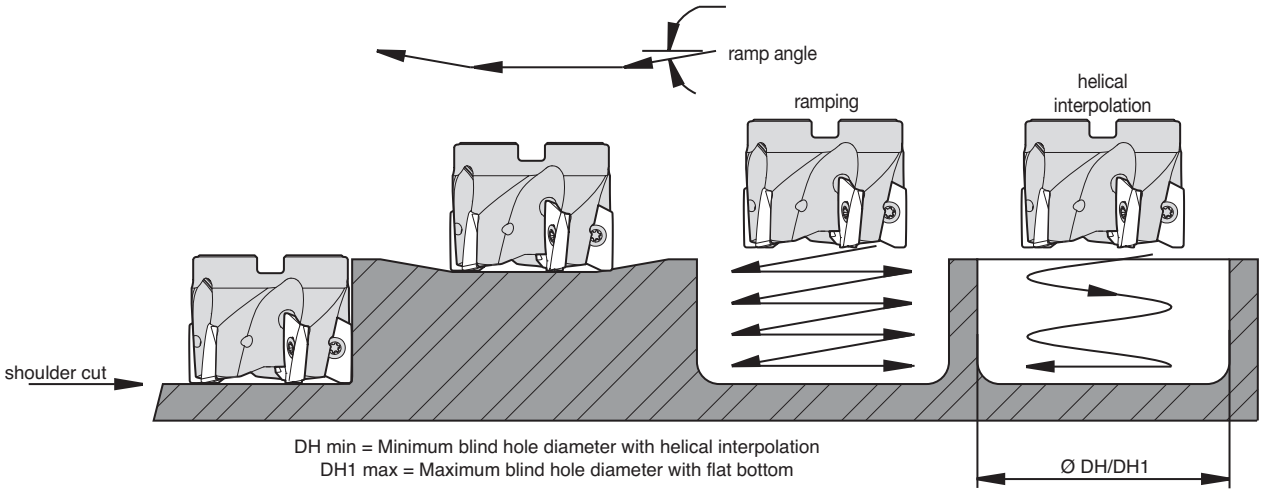
Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	0,08	**0,17**	0,23	0,06	**0,13**	0,18	0,06	**0,11**	0,15	0,05	**0,10**	0,14	0,05	**0,10**	0,14	.F..LDJ
.E..LDJ	0,08	**0,2**	0,35	0,06	**0,15**	0,26	0,06	**0,13**	0,23	0,05	**0,12**	0,21	0,05	**0,12**	0,21	.E..LDJ
.E..LD	0,12	**0,27**	0,47	0,09	**0,20**	0,35	0,08	**0,18**	0,31	0,07	**0,17**	0,29	0,07	**0,16**	0,28	.E..LD
.E..GD	0,17	**0,3**	0,52	0,13	**0,22**	0,39	0,11	**0,19**	0,34	0,10	**0,18**	0,32	0,10	**0,18**	0,31	.E..GD
.S..GE	0,17	**0,34**	0,57	0,13	**0,26**	0,43	0,11	**0,22**	0,37	0,10	**0,21**	0,35	0,10	**0,21**	0,34	.S..GE
.S..GD	0,17	**0,38**	0,64	0,13	**0,29**	0,48	0,11	**0,25**	0,41	0,10	**0,23**	0,39	0,10	**0,23**	0,38	.S..GD
.E..HD	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.E..HD

NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Mill-1, 18mm	25	17°	29,24	45,84	50
Mill-1, 18mm	32	11°	42,98	59,84	64
Mill-1, 18mm	40	8°	58,92	75,84	80
Mill-1, 18mm	50	5°	78,88	95,84	100
Mill-1, 18mm	63	4°	104,86	121,84	126
Mill-1, 18mm	80	3°	139,02	156,5	160
Mill-1, 18mm	100	2°	179,00	196,5	200
Mill-1, 18mm	125	2°	228,98	246,5	250
Mill-1, 18mm	160	1°	298,98	316,5	320

NOTE: Max ramp angle decreases as nose radius increases.

Mill 1-25™

Primary Application

Also known as Mill1 Max, the Mill 1-25 cutter is made specifically for aluminium machining but is also useful when machining cast iron. High-Feed capabilities enable routing applications with an axial depth of cut of up to 25mm (.98").

Features and Benefits

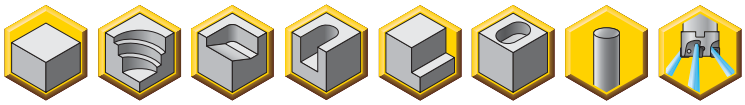
Functions

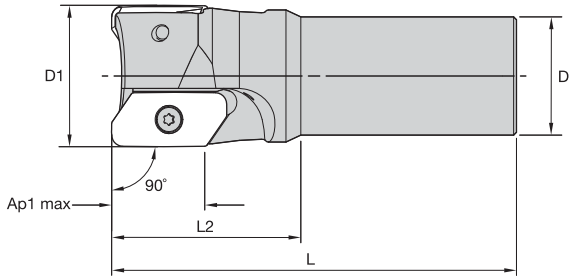
- Strong, thick inserts over 5,2mm (.200") thick.
- Axial depth of cut up to 25mm (.98").
- Cylindrical, monoblock/HSK63A, and shell mills.

Benefits

- Made for machining aluminium, but also useful for machining cast iron.
- High-Feed capability for routing applications.
- Balanced-by-design — if running over 10,000 RPM, balance the cutter assembly.

- For aluminium machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.





End Mills • Cylindrical Shank

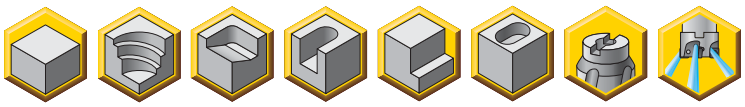
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2649569	**40A02R50A32SKE25**	40	32	111	50	25,0	2	15.0°	0,61	24300
2479504	**40A02R80A32SKE25**	40	32	141	80	25,0	2	15.0°	0,86	24300
2649571	**50A02R100A32SKE25**	50	32	161	100	24,9	2	10.0°	1,43	20600
2500741	**50A03R80A32SKE25**	50	32	141	80	24,9	3	10.0°	1,10	20600
2649572	**50A03R100A32SKE25**	50	32	161	100	24,9	3	10.0°	1,39	20600

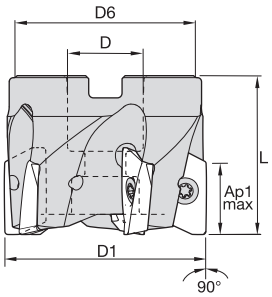
Spare Parts

D1	insert screw	Nm	Torx driver
40	**MS1374**	3,9	**DT15**
50	**MS1374**	3,9	**DT15**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- For aluminium machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.





Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2878139	**52A02RS90KE25**	52	22	49	58	24,8	2	9.5°	0,50	20000
2954527	**63A02RS90KE25**	63	22	50	55	24,7	2	7.0°	0,69	17600
2954528	**63A03RS90KE25**	63	22	50	55	24,7	3	7.0°	0,59	17600
2954529	**100B04RS90KE25**	100	32	78	60	24,7	4	3.5°	1,73	13200

Spare Parts




D1	insert screw	Nm	Torx driver	socket-head cap screw with coolant groove	coolant lock screw assembly
52	**MS1374**	3,9	**DT15**	**MS1235CG**	**–**
63	**MS1374**	3,9	**DT15**	**MS1242CG**	**–**
100	**MS1374**	3,9	**DT15**	**–**	**MS2188C**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

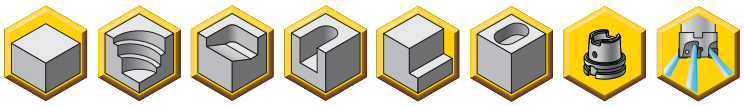
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

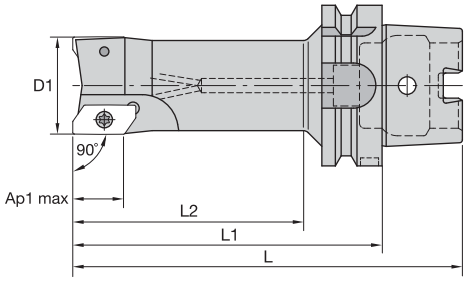
By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

- For aluminium machining.
- High-speed capability.
- All integral shank tools are balanced to G2.5 at 10.000 RPM.
- Insert screws should be changed when inserts are changed.





Monoblocks • HSK63A

order number	catalogue number	shank taper	D1	L	L1	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2880434	**40A02R110S63SKE25**	HSK63A	40	142	110	77,65	25,0	2	15.0°	1,17	24300
2880435	**40A02R140S63SKE25**	HSK63A	40	172	140	114,00	24,9	2	15.0°	1,17	24300
2880436	**50A02R110S63SKE25**	HSK63A	50	142	110	84,00	24,9	2	10.0°	1,51	20600
2880438	**50A03R110S63SKE25**	HSK63A	50	142	110	84,00	24,9	3	10.0°	1,44	20600
2880437	**50A02R140S63SKE25**	HSK63A	50	172	140	114,00	25,0	2	10.0°	1,91	20600
2880439	**50A03R140S63SKE25**	HSK63A	50	172	140	114,00	24,9	3	10.0°	1,81	20600

Spare Parts



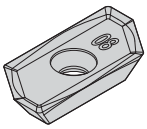
D1	insert screw	Nm	Torx driver	balancing screw
40	**MS1374**	3,9	**DT15**	**KUAM27**
50	**MS1374**	3,9	**DT15**	**KUAM27**

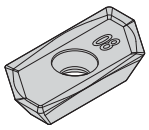
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

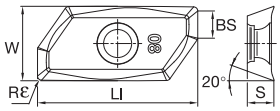
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	.F..LNJ	K313	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
N3	.E..LDJ	KC410M	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • KE...25L5


KEGT-LDJ


KEGT-LDJ2



● first choice
○ alternate choice

P
M
K
N ●
S
H

KEGT-LDJ

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KEGT25L508PEERLDJ	31,47	14,60	5,21	5,34	0,8	0,03	2	●
KEGT25L512PEERLDJ	31,47	14,60	5,21	4,94	1,2	0,03	2	●
KEGT25L516PEERLDJ	31,47	14,60	5,21	4,55	1,6	0,03	2	●
KEGT25L520PEERLDJ	31,47	14,60	5,21	4,15	2,0	0,03	2	●
KEGT25L524PEERLDJ	31,47	14,60	5,21	3,78	2,4	0,03	2	●
KEGT25L531PEERLDJ	31,47	14,60	5,21	3,06	3,1	0,03	2	●
KEGT25L540PEERLDJ	31,47	14,60	5,21	2,16	4,0	0,03	2	●
KEGT25L547PEERLDJ	31,47	14,60	5,21	1,40	4,8	0,03	2	●
KEGT25L550PEERLDJ	31,47	14,60	5,21	1,14	5,0	0,03	2	●
KEGT25L560PEERLDJ	31,47	14,60	5,21	0,13	6,0	0,03	2	●
KEGT25L564PEERLDJ	29,99	14,60	5,21	–	6,4	0,03	2	●

KEGT-LDJ2

catalogue number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KEGT25L508PEERLDJ2	31,39	14,59	5,21	7,30	0,8	–	2	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			K313		
P	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
	5	–	–	–	–	–	–
	6	–	–	–	–	–	–
M	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
K	1	–	–	–	190	**170**	150
	2	–	–	–	–	–	–
	3	–		–	–	–	–
N	1–2	1215	**1080**	995	795	**695**	600
	3	1080	**995**	915	–	–	–
S	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
H	1	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LNJ	0,08	**0,33**	0,67	0,06	**0,25**	0,50	0,06	**0,22**	0,44	0,05	**0,20**	0,41	0,05	**0,20**	0,40	.F..LNJ
.E..LDJ	0,08	**0,43**	0,77	0,06	**0,32**	0,57	0,06	**0,28**	0,50	0,05	**0,26**	0,47	0,05	**0,25**	0,46	.E..LDJ

NOTE: Use “Light Machining” values as starting feed rate.

More than just the right tool • the ultimate solution for titanium machining

That's **Beyond BLAST.**™

That's **Different Thinking.**

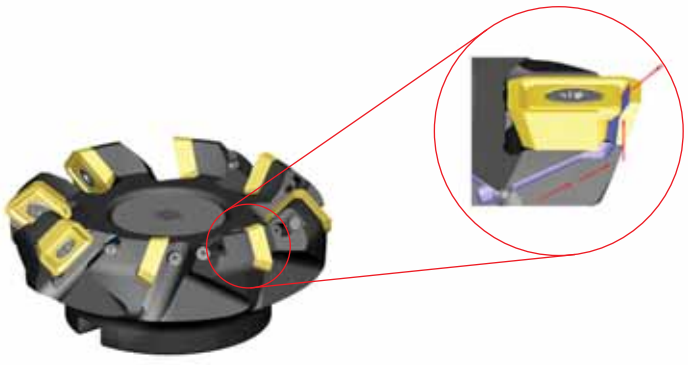
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

KSSM™ • Platform

Primary Application

The Kennametal KSSM platform is a versatile solution providing three insert sizes that cover a wide range of applications: face milling, shoulder milling, slotting, profiling, and Z-axis (plunge milling).

Features and Benefits

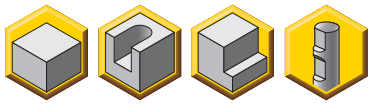
KSSM IC10

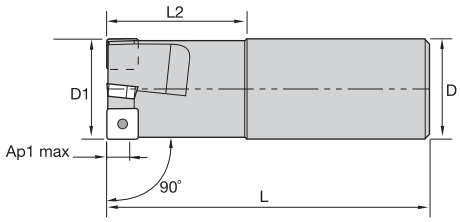
- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.

KSSM IC12

- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.
- Increased depth of cut.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





End Mills • Weldon® Shank

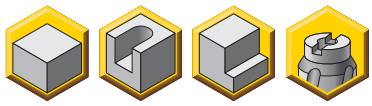
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
1981679	**25A02R039B25SSP10G**	25	25	96	39	6,6	2	0,3	37100
1981788	**32A03R039B32SSP10G**	32	32	100	39	6,6	3	0,5	33200
1981790	**40A04R049B32SSP10G**	40	32	110	49	6,6	4	0,7	30300

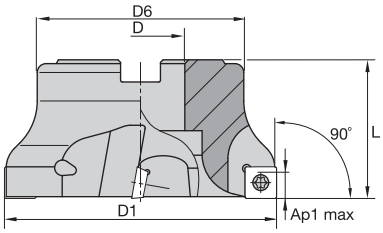
Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2148**	1,5	**DT9IP**
32	**MS2148**	1,5	**DT9IP**
40	**MS2148**	1,5	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





End Mills • Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
1981677	**50A05RS90SP10DG**	50	22	47	40	6,6	5	0,4	26300
1981678	**63A06RS90SP10DG**	63	22	50	40	6,6	6	0,5	23500
1981853	**80A08RS90SP10DG**	80	27	60	50	6,6	8	1,1	21450
1981854	**100B10RS90SP10DG**	100	32	80	50	6,6	10	1,7	18600

Spare Parts

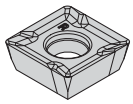


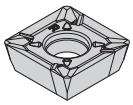
D1	insert screw	Nm	Torx Plus driver	mounting screw
50	**MS2148**	1,5	**DT9IP**	**MS1234**
63	**MS2148**	1,5	**DT9IP**	**MS1234**
80	**MS2148**	1,5	**DT9IP**	**MS1556**
100	**MS2148**	1,5	**DT9IP**	**–**

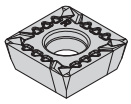
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

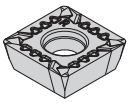
Insert Selection Guide

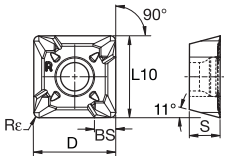
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


SPCT-LE


SPCT-LD2


SPET-GB2


SPPT-GB2



● first choice
○ alternate choice

beyond

P			●		●	●
M			●		○	○
K		●		●	○	○
N	●					
S			●			
H						

SPCT-LE

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPFRLE	10,00	3,97	10,00	2,70	0,4	0,02	4	●					
SPCT10T3PPFRLE	10,00	3,97	10,00	2,70	0,8	0,02	4	●					
SPCT10T312PPFRLE	10,00	3,97	10,00	2,70	1,2	0,02	4	●					
SPCT10T316FNLE	10,00	3,97	10,00	–	1,6	0,02	4	●					
SPCT10T320FNLE	10,00	3,97	10,00	–	2,0	0,02	4	●					

SPCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT10T304PPERLD2	10,00	3,97	10,00	2,70	0,4	0,04	4			●		●	
SPCT10T308PPERLD2	10,00	3,97	10,00	2,70	0,8	0,04	4		●	●		●	
SPCT10T312PPERLD2	10,00	3,97	10,00	2,70	1,2	0,04	4			●			
SPCT10T316ENLD2	10,00	3,97	10,00	–	1,6	0,04	4			●			
SPCT10T320ENLD2	10,00	3,97	10,00	–	2,0	0,04	4			●			

SPET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPET10T304PPERGB2	10,00	3,97	10,00	2,70	0,4	0,08	4			●	●		●
SPET10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4		●	●	●		●
SPET10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4		●	●	●		●

SPPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPPT10T3PPERGB2	10,00	3,97	10,00	2,70	0,8	0,08	4				●	●	●
SPPT10T3PPSRGB2	10,00	3,97	10,00	2,70	0,8	0,13	4				●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	–	–	–	260	**230**	215	–	–	–	550	**485**	450	455	**395**	370
	2	–	–	–	–	–	–	220	**190**	160	–	–	–	340	**310**	275	280	**255**	230
	3	–	–	–	–	–	–	200	**170**	140	–	–	–	310	**275**	255	255	**230**	205
	4	–	–	–	–	–	–	180	**150**	120	–	–	–	230	**215**	190	190	**175**	160
	5	–	–	–	–	–	–	150	**135**	120	–	–	–	275	**250**	230	260	**230**	210
	6	–	–	–	–	–	–	130	**100**	80	–	–	–	190	**170**	145	160	**135**	–
M	1	–	–	–	–	–	–	170	**150**	135	–	–	–	225	**200**	175	205	**185**	155
	2	–	–	–	–	–	–	155	**130**	110	–	–	–	205	**175**	160	185	**160**	140
	3	–	–	–	–	–	–	115	**100**	80	–	–	–	160	**145**	125	145	**130**	115
K	1	–	–	–	270	**245**	215	–	–	–	420	**385**	340	360	**325**	295	295	**265**	240
	2	–	–	–	210	**190**	175	–	–	–	335	**295**	275	285	**255**	235	235	**210**	190
	3	–	–	–	175	**160**	145	–	–	–	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	35	**30**	25	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	35	**30**	25	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	45	**35**	25	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	60	**45**	30	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,25**	0,49	0,07	**0,19**	0,37	0,06	**0,17**	0,32	0,05	**0,16**	0,30	0,05	**0,15**	0,29	.E..LD2
.E..GB2	0,17	**0,36**	0,61	0,13	**0,27**	0,46	0,11	**0,23**	0,40	0,10	**0,22**	0,37	0,10	**0,21**	0,36	.E..GB2
.S..GB2	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GB2

NOTE: Use “Light Machining” values as starting feed rate.

Beyond BLAST™ · KSSM™ 45°

More than just the right tool — the ultimate solution for titanium machining

Features and Benefits

- PCT — Precision Coolant Technology.
- Coolant delivery exactly to the cutting area.
- Increased heat transfer.
- Less tool/chip friction and shear stress.
- Improved chip control.
- True internal coolant assists chip evacuation.
- Beyond BLAST also works with regular low-pressure conditions.
- No need for investments in high-pressure equipment.
- Easy to convert from conventional to Beyond BLAST technology.
- Shop-floor-proven handling reduces costly downtime.
- Up to 100% better tool life.
- Performance leader in machining titanium.

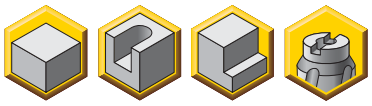
beyond™ BLAST™

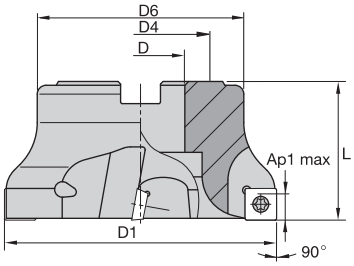
Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





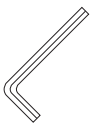
End Mills • Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	kg	max RPM
1926939	**50A03RS90SD12DG**	50	22	–	45	40	9,2	3	0,30	20600
1926938	**50A04RS90SD12DG**	50	22	–	46	40	9,2	4	0,30	20600
1926936	**63A04RS90SD12DG**	63	22	–	50	40	9,2	4	0,50	18300
1926933	**63A05RS90SD12DG**	63	22	–	50	40	9,2	5	0,50	18300
1926901	**80A05RS90SD12DG**	80	27	–	60	50	9,2	5	1,00	16300
1926898	**80A06RS90SD12DG**	80	27	–	60	50	9,2	6	1,00	16300
1926841	**100B06RS90SD12DG**	100	32	–	80	50	9,2	6	1,60	14600
1926840	**100B08RS90SD12DG**	100	32	–	80	50	9,2	8	1,70	14600
1926839	**125B07RS90SD12DG**	125	40	–	90	63	9,2	7	2,80	13000
1926837	**125B10RS90SD12DG**	125	40	–	90	63	9,2	10	2,90	13000
1926836	**160C08RS90SD12DG**	160	40	66,7	100	63	9,2	8	4,30	11500
1926983	**160C12RS90SD12DG**	160	40	66,7	100	63	9,2	12	4,40	11500
1926942	**200C11RS90SD12DG**	200	60	101,6	130	63	9,2	11	6,80	10300
1926941	**200C14RS90SD12DG**	200	60	101,6	130	63	9,2	14	6,83	10300

Spare Parts





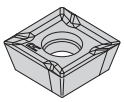


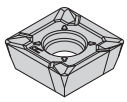

D1	insert screw	Nm	Torx Plus driver	shim	shim screw	hex driver	mounting screw
50	**MS2078**	4,0	**DT15IP**	–	–	–	**MS1234**
63	**MS2078**	4,0	**DT15IP**	–	–	–	**129.025**
80	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	**MS2038**
100	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
125	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
160	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–
200	**MS2078**	4,0	**DT15IP**	**SM449**	**SRS3**	**DH35M**	–

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–


SDCT-LE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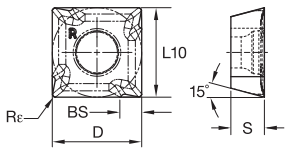


● first choice
○ alternate choice

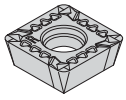
P			○	●		●	●	
M			●	●		○	○	
K		●	○		●	○	○	●
N	●							
S			●	●				
H								

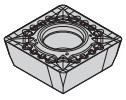
SDCT-LE

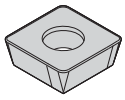
catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDFRLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●							
SDCT1204PDFRLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●							
SDCT120412PDFRLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●							
SDCT120416FNLE	12,70	4,76	12,70	–	1,6	0,02	4	●							
SDCT120420FNLE	12,70	4,76	12,70	–	2,0	0,02	4	●							
SDCT120424FNLE	12,70	4,76	12,70	–	2,4	0,02	4	●							
SDCT120432FNLE	12,70	4,76	12,70	–	3,2	0,02	4	●							

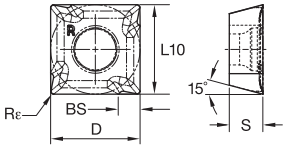
SDCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDERLD2	12,70	4,76	12,70	2,93	0,4	0,04	4				●		●		
SDCT1204PDERLD2	12,70	4,76	12,70	3,32	0,8	0,04	4		●		●		●		
SDCT120412PDERLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●				
SDCT120416ENLD2	12,70	4,76	12,70	–	1,6	0,04	4				●				
SDCT120420ENLD2	12,70	4,76	12,70	–	2,0	0,04	4				●				
SDCT120424ENLD2	12,70	4,76	12,70	–	2,4	0,04	4				●				
SDCT120432ENLD2	12,70	4,76	12,70	–	3,2	0,04	4			●	●				
SDCT120464ENLD2	12,70	4,76	12,70	–	6,3	0,04	2				●				


SDET-GB2


SDET-GB
SDPT-GB2


SDCW-GN



● first choice
○ alternate choice

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				○	●		●	●	
M				●	●		○	○	
K			●	○		●	○	○	●
N		●							
S				●	●				
H									

SDET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●		●	
SDET1204PDSRGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●		●	
SDET120412PDERGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●		●	
SDET120416SNGB2	12,70	4,76	12,70	–	1,6	0,13	4		●		●	●		●	
SDET120420SNGB2	12,70	4,76	12,70	–	2,0	0,13	4		●		●	●		●	
SDET120424SNGB2	12,70	4,76	12,70	–	2,4	0,13	4		●		●	●		●	
SDET120432XENGB2	12,70	4,76	12,70	–	3,2	0,08	2				●				
SDET120432SNGB2	12,70	4,76	12,70	–	3,2	0,13	4		●		●	●		●	
SDET120464SNGB2	12,70	4,76	12,70	–	6,4	0,13	2					●		●	

SDET-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB	12,70	4,76	12,70	3,36	0,8	0,07	4		●						
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	0,15	4				●			●	
SDET120412PDERGB	12,70	4,76	12,70	3,36	1,2	0,07	4				●				
SDET120464SNGB	12,70	4,76	12,70	–	6,4	0,15	2				●				

SDPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT1204PDERGB2	12,70	4,76	12,70	2,70	0,8	0,08	4				●	●	●	●	
SDPT1204PDSRGB2	12,70	4,76	12,70	2,70	0,8	0,13	4				●	●	●	●	

SDCW-GN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW1204PDSRGN	12,70	4,76	12,70	3,32	0,8	0,16	4								●
SDCW43EDSR8GN	12,70	4,76	12,70	3,36	0,8	0,16	4								●
SDCW120412PDSRGN	12,70	4,76	12,70	3,05	1,2	0,16	4								●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–
	3	1080	**995**	915	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	2	–	–	–	–	–	–	40	**35**	25	35	**30**	25
	3	–	–	–	–	–	–	50	**40**	25	45	**35**	25
	4	–	–	–	–	–	–	70	**50**	35	60	**45**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30			KY3500		
P	1	–	–	–	550	**485**	450	455	**395**	370	–	–	–
	2	–	–	–	340	**310**	275	280	**255**	230	–	–	–
	3	–	–	–	310	**275**	255	255	**230**	205	–	–	–
	4	–	–	–	230	**215**	190	190	**175**	160	–	–	–
	5	–	–	–	275	**250**	230	260	**230**	210	–	–	–
	6	–	–	–	190	**170**	145	160	**135**	–	–	–	–
M	1	–	–	–	225	**200**	175	205	**185**	155	–	–	–
	2	–	–	–	205	**175**	160	185	**160**	140	–	–	–
	3	–	–	–	160	**145**	125	145	**130**	115	–	–	–
K	1	420	**385**	340	360	**325**	295	295	**265**	240	805	**730**	650
	2	335	**295**	275	285	**255**	235	235	**210**	190	635	**570**	530
	3	280	**250**	230	240	**215**	200	195	**175**	160	535	**475**	435
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD2
.E..GB	0,17	**0,35**	0,59	0,12	**0,26**	0,44	0,11	**0,23**	0,38	0,10	**0,21**	0,36	0,10	**0,21**	0,35	.E..GB
.E..GB2	0,17	**0,36**	0,60	0,13	**0,27**	0,45	0,11	**0,23**	0,39	0,10	**0,22**	0,36	0,10	**0,21**	0,36	.E..GB2
.S..GB	0,17	**0,37**	0,61	0,13	**0,27**	0,46	0,11	**0,24**	0,40	0,10	**0,22**	0,37	0,10	**0,22**	0,37	.S..GB
.S..GB2	0,17	**0,37**	0,62	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	0,10	**0,22**	0,37	.S..GB2
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

KSSM-KSSP Helical

Primary Application

The KSSM-KSSP helical cutters were originally developed and proven for the aerospace industry but are now available for all industries. The proprietary variable rake design minimises vibration and chatter.

Features and Benefits

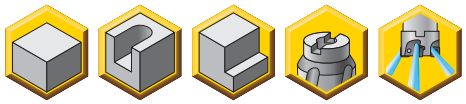
Features

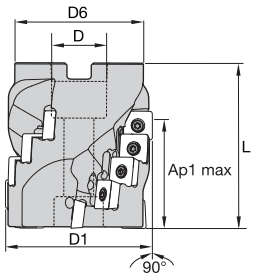
- Patented HARVI™ technology.
- Progressive helical rakes.
- Unique coolant supply.

Benefits

- Increased tool life in titanium.
- Increased metal removal rates.
- Lower power consumption.
- Ensures chip evacuation, even on exotic materials.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.





Shell Mills • Standard Pitch

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	kg	max RPM
2400693	**50A3RS90SD12L32**	50	22	44	55	32,4	9	3	0,46	16400
2400694	**63A3RS90SD12L50**	63	27	55	70	51,2	15	3	1,00	14600
2400695	**80A4RS90SD12L61**	80	32	70	80	61,6	24	4	2,13	12950

Spare Parts

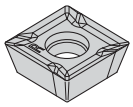
D1	insert screw	Nm	socket-head cap screw	Torx wrench
50	**MS1273**	4,0	**MS1235**	**TT15**
63	**MS1273**	4,0	**MS1238**	**TT15**
80	**MS1273**	4,0	**MS1241**	**TT15**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
S1–S2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts • SD.T1204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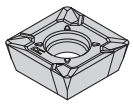
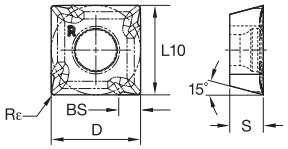
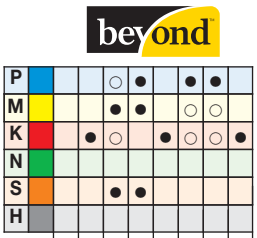

SDCT-LD2



● first choice
○ alternate choice



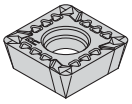
Shoulder Mills

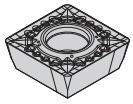
SDCT-LE

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDFRLE	12,70	4,76	12,70	2,70	0,4	0,02	4	●							
SDCT1204PDFRLE	12,70	4,76	12,70	2,70	0,8	0,02	4	●							
SDCT120412PDFRLE	12,70	4,76	12,70	2,70	1,2	0,02	4	●							
SDCT120416FNLE	12,70	4,76	12,70	–	1,6	0,02	4	●							
SDCT120420FNLE	12,70	4,76	12,70	–	2,0	0,02	4	●							
SDCT120424FNLE	12,70	4,76	12,70	–	2,4	0,02	4	●							
SDCT120432FNLE	12,70	4,76	12,70	–	3,2	0,02	4	●							

SDCT-LD2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT120404PDERLD2	12,70	4,76	12,70	2,93	0,4	0,04	4				●		●		
SDCT1204PDERLD2	12,70	4,76	12,70	3,32	0,8	0,04	4		●		●		●		
SDCT120412PDERLD2	12,70	4,76	12,70	3,05	1,2	0,04	4				●				
SDCT120416ENLD2	12,70	4,76	12,70	–	1,6	0,04	4				●				
SDCT120420ENLD2	12,70	4,76	12,70	–	2,0	0,04	4				●				
SDCT120424ENLD2	12,70	4,76	12,70	–	2,4	0,04	4				●				
SDCT120432ENLD2	12,70	4,76	12,70	–	3,2	0,04	4			●	●				
SDCT120464ENLD2	12,70	4,76	12,70	–	6,3	0,04	2				●				


SDET-GB2
SDPT-GB2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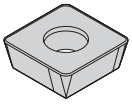
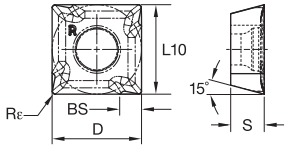

SDCW-GN



beyond

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				○	●		●	●	
M				●	●		○	○	
K			●	○		●	○	○	●
N		●							
S				●	●				
H									

● first choice
○ alternate choice

SDET-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB2	12,70	4,76	12,70	3,32	0,8	0,08	4		●		●	●		●	
SDET1204PDSRGB2	12,70	4,76	12,70	3,32	0,8	0,13	4		●		●	●		●	
SDET120412PDERGB2	12,70	4,76	12,70	3,05	1,2	0,08	4		●		●	●		●	
SDET120416SNGB2	12,70	4,76	12,70	–	1,6	0,13	4		●		●	●		●	
SDET120420SNGB2	12,70	4,76	12,70	–	2,0	0,13	4		●		●	●		●	
SDET120424SNGB2	12,70	4,76	12,70	–	2,4	0,13	4		●		●	●		●	
SDET120432XENGB2	12,70	4,76	12,70	–	3,2	0,08	2				●				
SDET120432SNGB2	12,70	4,76	12,70	–	3,2	0,13	4		●		●	●		●	
SDET120464SNGB2	12,70	4,76	12,70	–	6,4	0,13	2					●		●	

SDET-GB

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET1204PDERGB	12,70	4,76	12,70	3,36	0,8	0,07	4		●						
SDET1204PDSRGB	12,70	4,76	12,70	3,36	0,8	0,15	4				●			●	
SDET120412PDERGB	12,70	4,76	12,70	3,36	1,2	0,07	4				●				
SDET120464SNGB	12,70	4,76	12,70	–	6,4	0,15	2				●				

SDPT-GB2

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT1204PDERGB2	12,70	4,76	12,70	2,70	0,8	0,08	4				●	●	●	●	
SDPT1204PDSRGB2	12,70	4,76	12,70	2,70	0,8	0,13	4				●	●	●	●	

SDCW-GN

catalogue number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW1204PDSRGN	12,70	4,76	12,70	3,32	0,8	0,16	4								●
SDCW43EDSR8GN	12,70	4,76	12,70	3,36	0,8	0,16	4								●
SDCW120412PDSRGN	12,70	4,76	12,70	3,05	1,2	0,16	4								●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1–2	1215	**1080**	995	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**35**	25	35	30	25
	2	–	–	–	–	–	–	40	**35**	25	35	30	25
	3	–	–	–	–	–	–	50	**40**	25	45	35	25
	4	–	–	–	–	–	–	70	**50**	35	60	45	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	550	**485**	450	455	**395**	370
	2	–	–	–	340	**310**	275	280	**255**	230
	3	–	–	–	310	**275**	255	255	**230**	205
	4	–	–	–	230	**215**	190	190	**175**	160
	5	–	–	–	275	**250**	230	260	**230**	210
	6	–	–	–	190	**170**	145	160	**135**	
M	1	–	–	–	225	**200**	175	205	**185**	155
	2	–	–	–	205	**175**	160	185	**160**	140
	3	–	–	–	160	**145**	125	145	**130**	115
K	1	420	**385**	340	360	**325**	295	295	**265**	240
	2	335	**295**	275	285	**255**	235	235	**210**	190
	3	280	**250**	230	240	**215**	200	195	**175**	160
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,2	0,05	**0,10**	0,20	.F..LE
.E..LD2	0,09	**0,24**	0,51	0,07	**0,18**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,14**	0,30	.E..LD2
.E..GB	0,17	**0,35**	0,59	0,12	**0,26**	0,44	0,11	**0,23**	0,38	0,10	**0,21**	0,36	0,10	**0,21**	0,35	.E..GB
.E..GB2	0,17	**0,36**	0,6	0,13	**0,27**	0,45	0,11	**0,23**	0,39	0,10	**0,22**	0,36	0,10	**0,21**	0,36	.E..GB2
.S..GB	0,17	**0,37**	0,61	0,13	**0,27**	0,46	0,11	**0,24**	0,40	0,10	**0,22**	0,37	0,10	**0,22**	0,37	.S..GB
.S..GB2	0,17	**0,37**	0,62	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	0,10	**0,22**	0,37	.S..GB2
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

Screw-On Milling Cutter Adaptors

The Complete Solution to Milling

Features and Benefits

- High metal removal rates.
- High runout accuracy.
- Maximum performance capability.
- Optimising productivity with long reach and short overhang to support all types of applications.
- Cutter is kept on centre for precision and maximum performance compared to Weldon® shank system.
- Ability to extend with standard offering extensions and reducers.
- Ground face contact for rigidity and accuracy.

NOTE: Consult the Kennametal Tooling Systems catalogue for information on holders.

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KENNAMETAL®

KFSR™ Heavy-Duty Cutter

Primary Application

The KFSR heavy-duty cutter is specifically engineered for heavy-duty milling of steel and cast iron — with unparalleled chip control and large axial depth of cut. Engineered for applications requiring higher cutting speeds and feed rates with low cutting forces, it is ideally suited for the automotive, heavy automotive, rail, shipbuilding, construction vehicles, and general engineering industries.

Features and Benefits

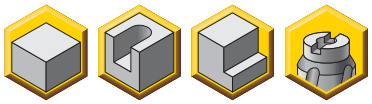
Features

- Enables heavy machining with low cutting forces and less vibration.
- Uses less horsepower with increased metal removal rates.
- Inserts with three and four serrations generate small chips for easy evacuation.
- Cutter design alternates the two insert styles to provide better overall chip control.
- Inserts stacked in helical rows.
- Replaceable shim provides pocket protection for leading insert. (NOTE: 63mm cutters do not contain a shim).

Notching

- Cutter design alternates two insert styles (G3 and G4) to provide better overall chip control.
- Insert serrations reduce cutting forces.
- Special chipbreaker generates small, controllable chips for easy evacuation.

- Lower cutting forces with serrated inserts.
- Small chips for ease of evacuation.
- Improved metal removal rates.
- IMPORTANT: Load the inserts in the correct position; see additional details below.



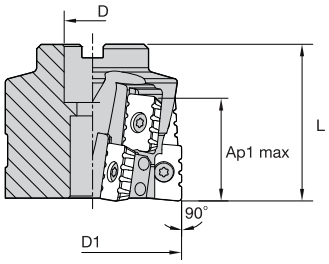


Fig. 1

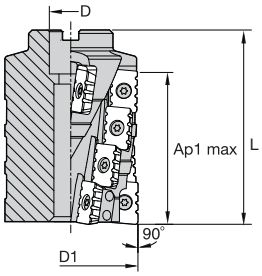


Fig. 2

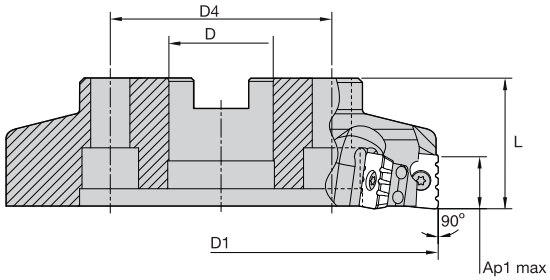


Fig. 3

Shell Mill

order number	catalogue number	D1	D	D4	L	Ap1 max	Z	Z U	figure	kg	max RPM
3588051	**KFSR063R1AP25M**	63	27	–	65	23,5	4	4	FIG 3	0,76	12100
3588253	**KFSR063R2AP25M**	63	27	–	85	45,0	8	4	FIG 1	0,84	12100
3588257	**KFSR080R1AP25M**	80	27	–	50	23,5	4	4	FIG 3	1,12	10000
3588259	**KFSR080R2AP25M**	80	27	–	70	45,0	8	4	FIG 1	1,67	10000
3588261	**KFSR080R4AP25M**	80	27	–	115	90,0	16	4	FIG 2	2,67	10000
3588265	**KFSR100R1AP25M**	100	32	–	50	23,5	6	6	FIG 3	1,67	9100
3588267	**KFSR100R2AP25M**	100	32	–	70	45,0	12	6	FIG 1	2,06	9100
3588269	**KFSR100R4AP25M**	100	32	–	115	90,0	24	6	FIG 2	3,19	9100
3588273	**KFSR125R1AP25M**	125	40	–	60	23,5	6	6	FIG 3	3,40	8000
3588275	**KFSR125R2AP25M**	125	40	–	70	45,0	12	6	FIG 1	3,80	8000
3588277	**KFSR125R4AP25M**	125	40	–	115	90,0	24	6	FIG 2	6,19	8000
3588279	**KFSR160R1AP25M**	160	40	66,7	60	23,5	8	8	FIG 3	5,85	6900
3588281	**KFSR160R2AP25M**	160	40	66,7	70	45,0	16	8	FIG 1	6,50	6900
3588284	**KFSR200R1AP25M**	200	60	101,6	60	23,5	10	10	FIG 3	7,16	6100
3588286	**KFSR200R2AP25M**	200	60	101,6	80	45,0	20	10	FIG 1	9,67	6100
3588288	**KFSR250R1AP25M**	250	60	101,6	60	23,5	12	12	FIG 3	13,71	5400
3588290	**KFSR250R2AP25M**	250	60	101,6	80	45,0	24	12	FIG 1	14,71	5400

Insert pocket detail:

- 63mm cutters do not contain a shim (see Spare Parts table).
- If insert pocket is marked with number “3”, use insert AP ER-G3.
- If insert pocket is marked with number “4”, use insert AP ER-G4.
- It is important to use the correct insert in position 3 or 4. Failure to do so will result in damage to the cutter body.
- Only use inserts with nose radii greater than 0,8mm in the first row.

Spare Parts






D1	insert screw	Nm	Torx wrench	shim screw	Torx driver	shim	socket-head cap screw
63	**MS2209**	53,0	**TT25**	–	–	–	**MS1198**
80	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	**MS1198**
100	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
125	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
160	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
200	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–
250	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**	–

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

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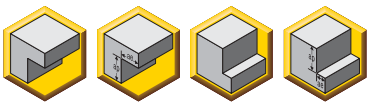
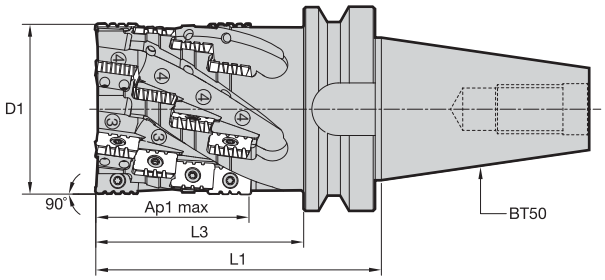
KENNAMETAL®

- Lower cutting forces with serrated inserts.
- Small chips for ease of evacuation.
- Improved metal removal rates.
- IMPORTANT: Load inserts in the correct position; see additional details below.





End Mills • BT50 Taper

order number	catalogue number	shank taper	D1	L1	L3	Ap1 max	Z	Z U	kg	max RPM
3588254	**KFSR063RBT504**	BT50	63	160	122	90,0	16	4	5,36	12100
3588255	**KFSR063RBT505**	BT50	63	180	142	111,0	20	4	6,14	12100
3588262	**KFSR080RBT504**	BT50	80	160	122	90,0	16	4	6,99	10000
3588263	**KFSR080RBT505**	BT50	80	180	142	111,0	20	4	7,30	10000
3588270	**KFSR100RBT504**	BT50	100	160	122	90,0	24	6	9,42	9100
3588271	**KFSR100RBT505**	BT50	100	180	142	111,0	30	6	10,05	9100

Insert pocket detail:

- 63mm cutters do not contain a shim (see Spare Parts table).
- If insert pocket is marked with number “3”, use insert AP ER-G3.
- If insert pocket is marked with number “4”, use insert AP ER-G4.
- It is important to use the correct insert in position 3 or 4. Failure to do so will result in damage to the cutter body.
- Only use inserts with nose radii greater than 0,8mm in the first row.

Spare Parts





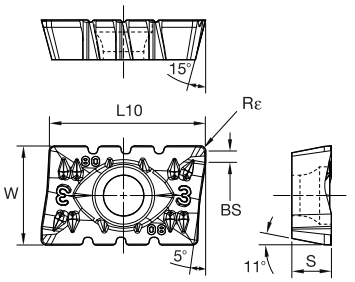
D1	insert screw	Nm	Torx wrench	shim screw	Torx driver	shim
63	**MS2209**	53,0	**TT25**	**–**	**–**	**–**
80	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**
100	**MS2209**	53,0	**TT25**	**MS2210**	**DT15**	**SM904**

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

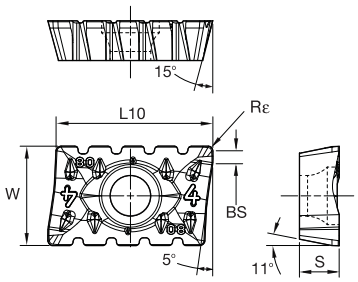
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..L	KC720M	**.E..L**	**KC720M**	.E..L	KC730M
P3–P4	.E..G	KC720M	**.E..G**	**KC720M**	.E..G	KC730M
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..L	KC505M	**.E..L**	**KC505M**	.E..G	KC505M
K3	.E..L	KC505M	**.E..G**	**KC505M**	.E..G	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Insert • Heavy-Duty Cutters

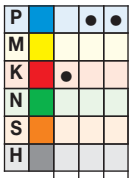


APMT G3



APMT G4
(this must be used in conjunction with insert G3)

● first choice
○ alternate choice



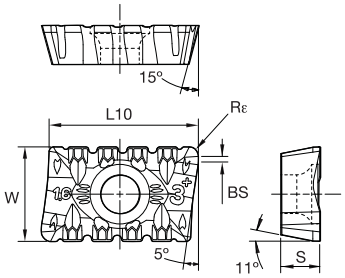
Shoulder Mills

APMT G3

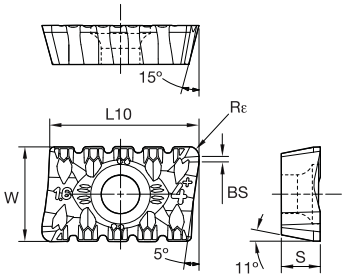
catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG3	6,35	25,00	1,80	0,8	15,88	0,07	2	●		
APMT250616ERG3	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●
APMT250640ERG3	6,35	25,00	0,10	4,0	15,88	0,07	2	●	●	●

APMT G4

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG4	6,35	25,00	1,80	0,8	15,88	0,07	2	●		
APMT250616ERG4	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●
APMT250640ERG4	6,35	25,00	0,10	4,0	15,88	0,07	2	●	●	●



APMT L3P



APMT L4P
(this must be used in conjunction with insert L3P)

● first choice
○ alternate choice

P			●	●
M				
K		●		
N				
S				
H				

APMT L3P

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL3P	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●

APMT L4P

catalogue number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL4P	6,35	25,00	1,00	1,6	15,88	0,07	2	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC505M			KC720M			KC730M		
P	1	–	–	–	220	**200**	180	130	**120**	100
	2	–	–	–	200	**180**	160	120	**110**	105
	3	–	–	–	180	**160**	140	110	**100**	90
	4	–	–	–	160	**150**	140	100	**90**	80
	5	–	–	–	140	**120**	100	90	**80**	75
	6	–	–	–	100	**80**	80	80	**75**	70
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	190	**170**	150	–	–	–	–	–	–
	2	175	**155**	135	–	–	–	–	–	–
	3	115	**95**	75	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..L	0,17	**0,35**	0,71	0,12	**0,26**	0,53	0,11	**0,23**	0,46	0,10	**0,21**	0,43	0,10	**0,21**	0,42	.E..L
.E..G	0,17	**0,43**	0,85	0,12	**0,32**	0,64	0,11	**0,28**	0,55	0,10	**0,26**	0,52	0,10	**0,25**	0,51	.E..G

NOTE: Use “Light Machining” values as starting feed rate.

APMT L3P

					(R-1) = one high KFSR100R1AP25		(R-2) = two high KFSR100R2AP25		(R-4) = four high KFSR100R4AP25	
material	**overhang**	**recommended condition (vc * fz)**	**RPM**	**table feed**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**	**DOC (Ap x Ae)**	**MRR (cm^3/min)**
steel	less than 100mm	vc = 150 fz = 0,2	478	574	20 x 80	918	40 x 40	918	75 x 20	861
	100–200mm	vc = 150 fz = 0,2	478	574	20 x 40	459	40 x 20	459	75 x 10	431
	over 201mm	vc = 100 fz = 0,2	320	380	20 x 30	228	40 x 20	304	75 x 10	285
cast iron	less than 100mm	vc = 180 fz = 0,2	573	688	20 x 80	1100	40 x 40	1100	75 x 20	1032
	100–200mm	vc = 180 fz = 0,2	573	688	20 x 40	550	40 x 20	550	75 x 10	516
	over 201mm	vc = 120 fz = 0,2	380	460	20 x 30	276	40 x 20	368	75 x 10	345
stainless steel	not recommended									
aluminium/copper	not recommended									
high-temp alloys	not recommended									