



INNOVATIONS **CATALOG**

**Mill 4™ Series**

2015

[www.kennametal.com](http://www.kennametal.com)





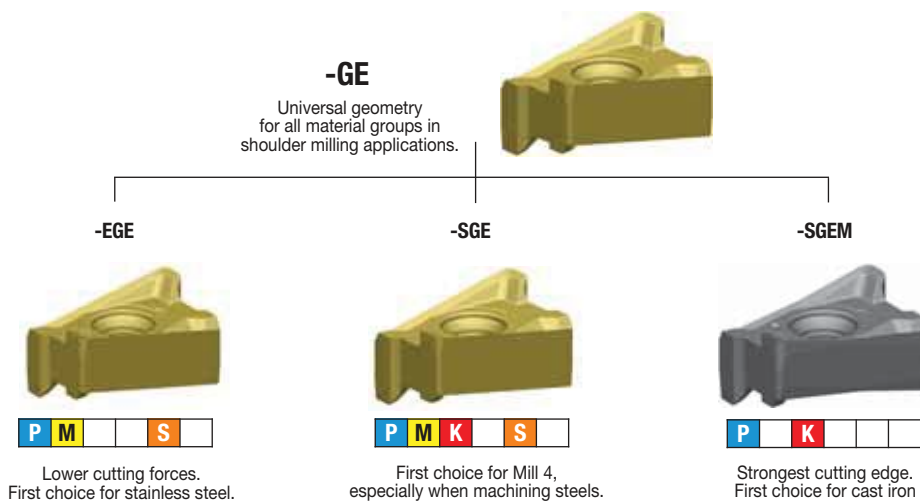
## Mill 4-15™ • Double-Sided Shoulder Mill

### Primary Application

The Mill 4™ Series is specially engineered to achieve excellent performance in surface quality as well as higher material removal rates in shoulder milling applications. Its unique design enables multiple passes (stepping down) with outstanding results. Mill 4 is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing operations.

## Features and Benefits

- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- “Stepless” solution for multiple pass operations.



State-of-the-art stepping down capabilities — “stepless” solution!

Screw-on, end-mill, and shell mill cutters with effective internal coolant supply.

Multiple corner nose radii available.

Up to 15,5mm (.610") depth-of-cut capabilities.

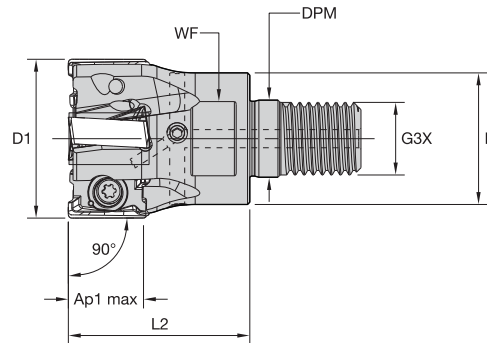
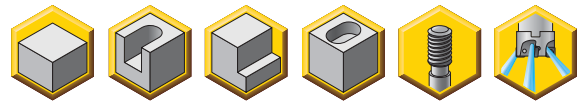
Integrated wiper facet for best-in-class floor finishing.

Innovative cutting geometry to provide superior wall and surface finish capabilities.

*To learn more about Kennametal's Mill 4™ Series, use your smartphone or tablet to scan the QR code here.*



- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm (.610") depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



■ Screw-On End Mills

order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z lbs	max RPM
5568064	M4D100L1502M12L125	1.000	.827	.492	M12	1.250	.667	.610	2 .73	26300
5568065	M4D125L1503M16L175	1.250	1.142	.669	M16	1.750	.943	.610	3 .44	22100
5568066	M4D150L1504M16L175	1.500	1.142	.669	M16	1.750	.943	.610	4 .52	19500

■ Spare Parts



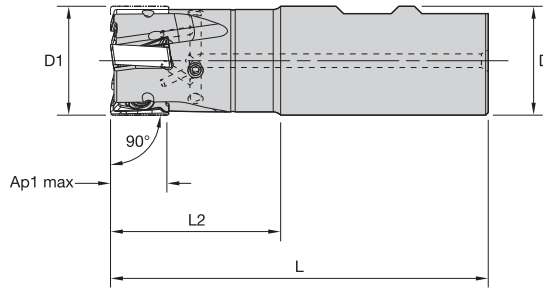
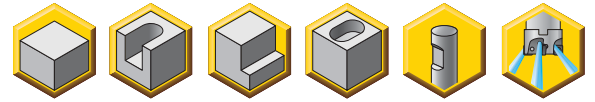
insert screw



Torx Plus driver

D1	insert screw	in. lbs.	Torx Plus driver
1.000	MS-2071	31.000	DT15IP
1.250	MS-2071	31.000	DT15IP
1.500	MS-2071	31.000	DT15IP

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■ **Weldon End Mills**

order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
5568067	M4D100L1502W075L175	1.000	.750	3.780	1.750	.610	2	.73	26300
5544366	M4D100L1502W100L175	1.000	1.000	4.030	1.750	.610	2	.73	26300
5544367	M4D125L1503W100L225	1.250	1.000	4.530	2.250	.610	3	.90	22100
5568068	M4D125L1503W125L225	1.250	1.250	4.530	2.250	.610	3	1.30	22100
5568069	M4D150L1503W125L225	1.500	1.250	4.530	2.250	.610	3	1.41	19500
5544368	M4D150L1504W125L225	1.500	1.250	4.530	2.250	.610	4	1.41	19500

■ **Spare Parts**



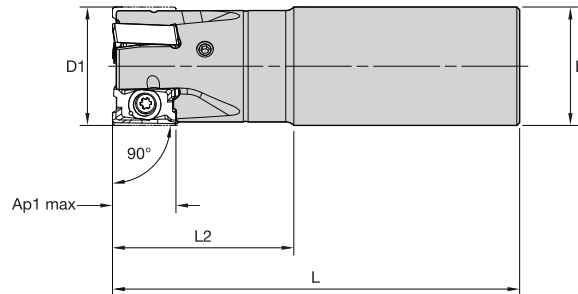
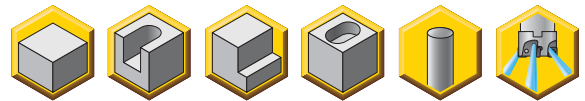
insert screw



Torx Plus driver

D1	insert screw	in. lbs.	Torx Plus driver
1.000	MS-2071	31.000	DT15IP
1.250	MS-2071	31.000	DT15IP
1.500	MS-2071	31.000	DT15IP

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■ Cylindrical End Mills

order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
5544369	M4D100L1502C100L800	1.000	1.000	8.000	1.750	.610	2	1.59	26300
5568080	M4D100L1502C100L1000	1.000	1.000	10.000	1.750	.610	2	2.03	26300
5544400	M4D125L1503C125L800	1.250	1.250	8.000	2.250	.610	3	2.50	22100
5568081	M4D125L1503C125L1000	1.250	1.250	10.000	2.250	.610	3	3.18	22100
5544401	M4D150L1504C125L800	1.500	1.250	8.000	2.250	.610	4	2.60	19500
5568082	M4D150L1504C125L1000	1.500	1.250	10.000	2.250	.610	4	3.29	19500

■ Spare Parts



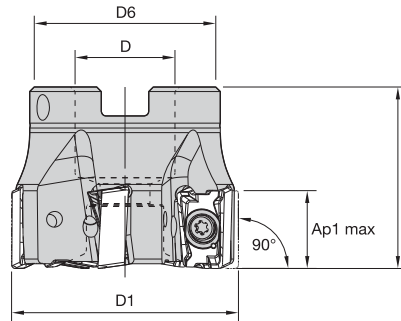
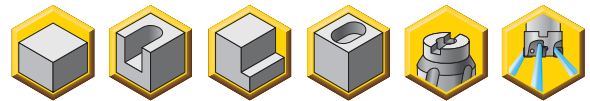
insert screw



Torx Plus driver

D1	insert screw	in. lbs.	Torx Plus driver
1.000	MS-2071	31.000	DT15IP
1.250	MS-2071	31.000	DT15IP
1.500	MS-2071	31.000	DT15IP

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### ■ Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	lbs	max RPM
5544402	M4D150L1505S050L157	1.500	.500	1.420	1.575	.610	5	.43	19500
5544403	M4D200L1505S075L157	2.000	.750	1.750	1.575	.610	5	.73	16100
5544404	M4D200L1506S075L157	2.000	.750	1.750	1.575	.610	6	.71	16100
5568083	M4D250L1505S075L157	2.500	.750	1.750	1.575	.610	5	1.09	14100
5544405	M4D250L1506S075L157	2.500	.750	1.750	1.575	.610	6	1.05	14100
5568084	M4D250L1507S100L175	2.500	1.000	2.190	1.750	.610	7	1.31	14100
5544406	M4D300L1507S100L175	3.000	1.000	2.190	1.750	.610	7	1.82	12700
5568085	M4D300L1509S100L175	3.000	1.000	2.190	1.750	.610	9	1.85	12700
5544407	M4D300L1508S125L200	3.000	1.250	2.665	2.000	.610	8	2.22	12700
5568086	M4D400L1508S150L200	4.000	1.500	3.380	2.000	.610	8	3.31	10800
5544408	M4D400L1511S150L200	4.000	1.500	3.380	2.000	.610	11	3.25	10800

### ■ Spare Parts



insert  
screw



Torx Plus  
driver

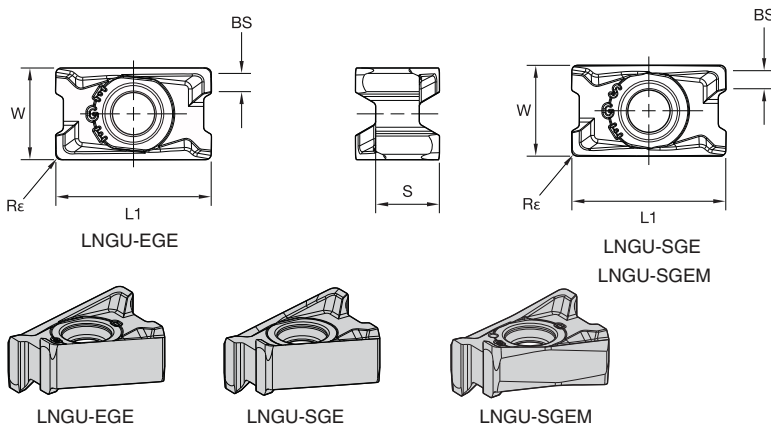
D1	insert screw	in. lbs.	Torx Plus driver
1.500	MS-2071	31.000	DT15IP
2.000	MS-2071	31.000	DT15IP
2.500	MS-2071	31.000	DT15IP
3.000	MS-2071	31.000	DT15IP
4.000	MS-2071	31.000	DT15IP

■ Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1-P2	.S..GE	KC522M	.S..GE	KC725M	.S..GE	KC725M
P3-P4	.S..GE	KC522M	.S..GE	KCPK30	.S..GE	KCPK30
P5-P6	.S..GE	KCPM20	.S..GE	KCPK30	.S..GE	KCPK30
M1-M2	.E..GE	KCSM30	.E..GE	KC725M	.S..GE	KC725M
M3	.E..GE	KCSM30	.E..GE	KC725M	.S..GE	KC725M
K1-K2	.S..GE	KCK15	.S..GEM	KCK15	.S..GEM	KCPM20
K3	.S..GE	KC520M	.S..GEM	KC520M	.S..GEM	KC520M
N1-N2	—	—	—	—	—	—
N3	—	—	—	—	—	—
S1-S2	.E..GE	KCSM30	.E..GE	KC725M	.S..GE	KC725M
S3	.E..GE	KCSM30	.E..GE	KC725M	.S..GE	KC725M
S4	.E..GE	KCSM30	.E..GE	KC725M	.E..GE	KC725M
H1	—	—	—	—	—	—

Indexable Inserts • Mill 4-15™

- -EGE is the first choice for stainless steel and high-temp alloys.
- -SGE is the universal geometry for Mill 4-15. First choice when machining steel, as well as stainless steel and high-temp alloys in heavy applications.
- -SGEM geometry is the first choice for cast iron machining in medium and heavy applications.



	P	M	K	N	S	H
● first choice	●	●	●	●	●	●
○ alternate choice	○	○	○	○	○	○

■ LNG15-EGE

catalog number	L1	W	S	BS	Re	hm	cutting edges	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KCSM30	KCPM40
LNGU541ERGE	.670	.394	.187	.087	.016	.003	4	●	●	●	●	●	●	●	●
LNGU542ERGE	.670	.394	.187	.072	.031	.003	4	●	●	●	●	●	●	●	●
LNGU543ERGE	.670	.394	.187	.057	.047	.003	4	●	●	●	●	●	●	●	●

■ LNGU-SGE

catalog number	L1	W	S	BS	Re	hm	cutting edges	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KCSM30	KCPM40
LNGU541SRGE	.669	.394	.187	.086	.016	.004	4	●	●	●	●	●	●	●	●
LNGU542SRGE	.670	.394	.187	.071	.031	.004	4	●	●	●	●	●	●	●	●
LNGU543SRGE	.669	.394	.187	.056	.047	.004	4	●	●	●	●	●	●	●	●

■ LNG15-SGEM

catalog number	L1	W	S	BS	Re	hm	cutting edges	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KCSM30	KCPM40
LNGU542SRGEM	.670	.394	.187	.067	.031	.004	4	●	●	●	●	●	●	●	●



■ Recommended Starting Speeds [m/min]

Material Group		KC520M			KC522M			KCSM30			KC725M		
P	1	—	—	—	1080	<b>940</b>	880	1210	<b>1050</b>	980	860	<b>750</b>	700
	2	—	—	—	900	<b>790</b>	660	1000	<b>890</b>	720	720	<b>630</b>	530
	3	—	—	—	830	<b>700</b>	580	930	<b>790</b>	640	660	<b>560</b>	460
	4	—	—	—	740	<b>610</b>	490	820	<b>670</b>	540	590	<b>490</b>	390
	5	—	—	—	610	<b>550</b>	490	670	<b>620</b>	540	490	<b>440</b>	390
	6	—	—	—	540	<b>410</b>	330	610	<b>460</b>	360	430	<b>330</b>	260
M	1	—	—	—	670	<b>590</b>	540	740	<b>660</b>	610	560	<b>490</b>	450
	2	—	—	—	610	<b>520</b>	430	670	<b>590</b>	480	510	<b>430</b>	360
	3	—	—	—	460	<b>400</b>	310	510	<b>440</b>	340	380	<b>330</b>	260
K	1	880	<b>800</b>	710	750	<b>680</b>	600	—	—	—	—	—	—
	2	690	<b>620</b>	580	590	<b>530</b>	490	—	—	—	—	—	—
	3	580	<b>520</b>	470	490	<b>440</b>	400	—	—	—	—	—	—
N	1-2	—	—	—	—	—	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—	—	—	—	—	—
S	1	—	—	—	130	<b>120</b>	90	150	<b>130</b>	100	115	<b>100</b>	80
	2	—	—	—	130	<b>120</b>	90	150	<b>130</b>	100	115	<b>100</b>	80
	3	—	—	—	170	<b>130</b>	90	180	<b>150</b>	100	150	<b>115</b>	80
	4	—	—	—	230	<b>170</b>	120	280	<b>200</b>	130	200	<b>150</b>	100
H	1	—	—	—	390	<b>300</b>	230	—	—	—	—	—	—

Material Group		KCPM40			KCK15			KCPM20			KCPK30		
P	1	970	<b>850</b>	800	—	—	—	1810	<b>1590</b>	1470	1485	<b>1300</b>	1210
	2	820	<b>710</b>	590	—	—	—	1120	<b>1010</b>	910	920	<b>830</b>	750
	3	750	<b>640</b>	520	—	—	—	1010	<b>910</b>	830	830	<b>750</b>	680
	4	670	<b>560</b>	440	—	—	—	760	<b>700</b>	630	620	<b>575</b>	520
	5	560	<b>510</b>	440	—	—	—	910	<b>820</b>	750	850	<b>760</b>	690
	6	490	<b>380</b>	300	—	—	—	630	<b>550</b>	475	520	<b>450</b>	—
M	1	640	<b>560</b>	510	—	—	—	730	<b>655</b>	570	680	<b>600</b>	515
	2	570	<b>490</b>	410	—	—	—	670	<b>580</b>	520	610	<b>530</b>	460
	3	430	<b>380</b>	300	—	—	—	530	<b>475</b>	410	475	<b>430</b>	380
K	1	—	—	—	1380	<b>1255</b>	1115	1180	<b>1070</b>	960	965	<b>875</b>	780
	2	—	—	—	1095	<b>975</b>	910	940	<b>840</b>	770	770	<b>690</b>	630
	3	—	—	—	920	<b>815</b>	750	790	<b>700</b>	650	645	<b>575</b>	530
N	1-2	—	—	—	—	—	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—	—	—	—	—	—
S	1	130	<b>110</b>	100	—	—	—	—	—	—	—	—	—
	2	130	<b>110</b>	100	—	—	—	—	—	—	—	—	—
	3	160	<b>130</b>	100	—	—	—	—	—	—	—	—	—
	4	210	<b>160</b>	110	—	—	—	—	—	—	—	—	—
H	1	—	—	—	—	—	—	460	<b>380</b>	310	—	—	—

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
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Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)														Insert Geometry	
	10%			20%			30%			40%			50-100%			
.E..GE	.005	<b>.009</b>	.013	.004	<b>.007</b>	.010	.003	<b>.006</b>	.008	.003	<b>.006</b>	.008	.003	<b>.006</b>	.008	.E..GE
.S..GE	.007	<b>.012</b>	.018	.005	<b>.009</b>	.013	.004	<b>.008</b>	.012	.004	<b>.007</b>	.011	.004	<b>.007</b>	.011	.S..GE
.S..GEM	.007	<b>.013</b>	.020	.005	<b>.010</b>	.015	.004	<b>.009</b>	.013	.004	<b>.008</b>	.012	.004	<b>.008</b>	.012	.S..GEM

NOTE: Use "Light Machining" values as starting feed rate.

# INNOVATIONS **CATALOG**

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