

X60 Series

Solid Carbide End Mills



X60 Series

X60 Series, are used for machining of material with the HRC between 45-55, and also the “Miniature End Mills” are made by the same material. This special ultra fine carbide grade is used for very sophisticated materials without compromising high speed machining

ISO code	USA code	Grain Size	Cobalt Percentage	Density	Hardness		
			Co(%)	g/cm ³	HV10	HV30	HRA
K20-K30	C-2	0.4 μ m	12.0	14.1	1760	1730	92.7



XF Star 4 / 2 (≤60 HRC)
Flat End Mills - Regular Series

Article No.		Dimension (mm)					AT-coated
4 Flute	2 Flute	∅ d1	∅ d2 h10	L2 h6	L1		
XF4-SEM 4010	XF4-SEM 2010	1	4	3	50	■	
XF4-SEM 4015	XF4-SEM 2015	1.5	4	4	50	■	
XF4-SEM 4020	XF4-SEM 2020	2	4	5	50	■	
XF4-SEM 4025	XF4-SEM 2025	2.5	4	7	50	■	
XF4-SEM 4030	XF4-SEM 2030	3	4	9	50	■	
XF3-SEM 4030	XF3-SEM 2030	3	3	9	50	■	
XF4-SEM 4040	XF4-SEM 2040	4	4	11	50	■	
XF6-SEM 4030	XF6-SEM 2030	3	6	9	50	■	
XF6-SEM 4040	XF6-SEM 2040	4	6	11	50	■	
XF6-SEM 4050	XF6-SEM 2050	5	6	13	50	■	
XF6-SEM 4060	XF6-SEM 2060	6	6	16	50	■	
XF8-SEM 4070	XF8-SEM 2070	7	8	18	60	■	
XF8-SEM 4080	XF8-SEM 2080	8	8	20	60	■	
XF10-SEM 4090	XF10-SEM 2090	9	10	23	75	■	
XF10-SEM 4100	XF10-SEM 2100	10	10	25	75	■	
XF12-SEM 4120	XF12-SEM 2120	12	12	30	75	■	
XF16-SEM 4130	XF16-SEM 2130	13	16	35	100	■	
XF16-SEM 4140	XF16-SEM 2140	14	16	35	100	■	
XF16-SEM 4150	XF16-SEM 2150	15	16	38	100	■	
XF16-SEM 4160	XF16-SEM 2160	16	16	40	100	■	
XF20-SEM 4180	XF20-SEM 2180	18	20	40	100	■	
XF20-SEM 4200	XF20-SEM 2200	20	20	45	100	■	
XF25-SEM 4220	XF25-SEM 2220	22	25	45	100	■	
XF25-SEM 4250	XF25-SEM 2250	25	25	45	100	■	

■ Available EX stock / subject to prior sale
SMG - Super-Fine Micron Grade



X
60
Series

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

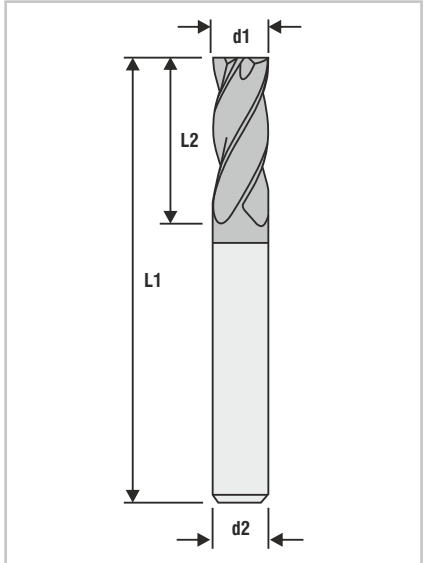








FLAT
End Mills



Tolerance

Diameter	Range
1 ≤ d < 8	0 / -0.02
8 ≤ d < 18	0 / -0.03
18 ≤ d	0 / -0.04

**X
60
Series**

Superstar (≤ 60 HRC)
Slotting & Pocketing End Mills – Regular Series

Article No.	Dimension (mm)					
	3 Flute	\emptyset d1 h10	\emptyset d2 h6	L2	L1	AT-coated
SU4-SEM 3030		3	4	9	50	■
SU4-SEM 3040		4	4	11	50	■
SU6-SEM 3050		5	6	13	50	■
SU6-SEM 3060		6	6	16	50	■
SU8-SEM 3080		8	8	20	60	■
SU10-SEM 3100		10	10	25	75	■
SU12-SEM 3120		12	12	30	75	■
SU16-SEM 3160		16	16	40	100	■
SU20-SEM 3200		20	20	45	100	■

**FLAT
End Mills**

■ Available EX stock / subject to prior sale
SMG - Super-Fine Micron Grade

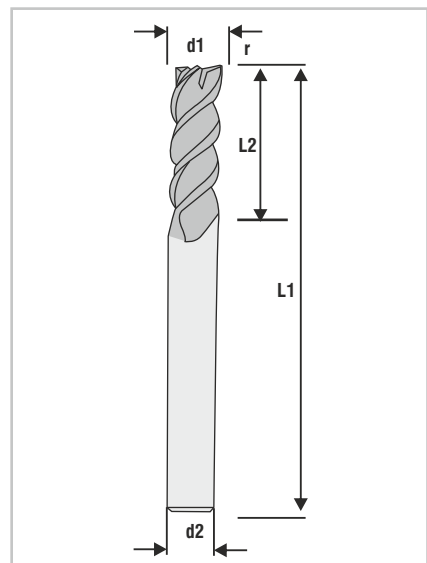


Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

AT
COATING

I
45°

SMG
0.4mm



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

Multistar (≤60 HRC)

Multi Fluted End Mills - Regular Series
Multi Fluted End Mills - Long Flute Series



X
60
Series

Article No.	Dimension (mm)					AT-coated
	6 Flutes	Ø d1 h10	Ø d2 h6	L2	L1	
X6-SMF 6060		6.0	6	16	50	■
X8-SMF 6080		8.0	8	20	60	■
X10-SMF 6100		10.0	10	25	75	■
X12-SMF 6120		12.0	12	30	75	■
X16-SMF 6160		16.0	16	40	100	■
X20-SMF 6200		20.0	20	45	100	■

Multi Fluted End Mills - Long Flute Series


Article No.	Dimension (mm)					AT-coated
	6 Flutes	Ø d1 h10	Ø d2 h6	L2	L1	
X6-SMF 6060 LF		6.0	6	24	75	■
X8-SMF 6080 LF		8.0	8	30	75	■
X10-SMF 6100 LF		10.0	10	40	100	■
X12-SMF 6120 LF		12.0	12	45	100	■
X16-SMF 6160 LF		16.0	16	64	150	■
X20-SMF 6200 LF		20.0	20	72	150	■

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



Regular
Series
LF
SERIES

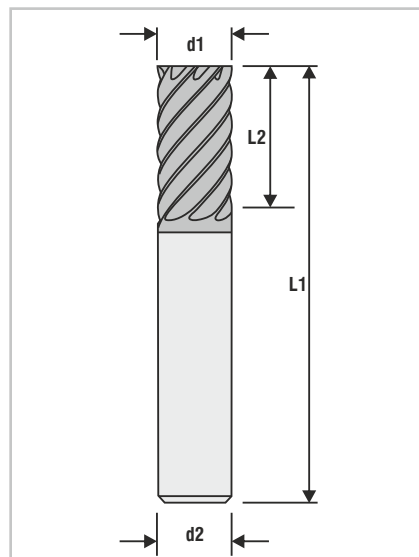
AT
COATING



45°

SMG
0.4mm

FLAT
End Mills



Tolerance	
Diameter	Range
1 ≤ d < 8	0 / -0.02
8 ≤ d < 18	0 / -0.03
18 ≤ d	0 / -0.04

Available EX stock / subject to prior sale
 Only Available against orders with **MOQ 20** Nos.
SMG - Super-Fine Micron Grade

X
60
Series

XF Star 4 (≤ 60 HRC) LS

Flat End Mills - Long Shank Series



	R _m < 850	<input checked="" type="checkbox"/>
Steel	R _m 850-1300	<input checked="" type="checkbox"/>
	R _m 1300-1500	<input checked="" type="checkbox"/>
	M	Stainless Steel
K	Cast Iron	<input checked="" type="checkbox"/>
N	Copper	<input type="checkbox"/>
S	Titanium	<input checked="" type="checkbox"/>
Hardened Steel	HRC 48-55	<input checked="" type="checkbox"/>
	HRC 56-60	<input type="checkbox"/>
	HRC > 60	<input type="checkbox"/>

4 Flute	Dimension (mm)					AT-coated
	\emptyset d1	\emptyset d2 h10	L2 h6	L1		
XF3-SEM 4030 LS 75	3	3	9	75	<input checked="" type="checkbox"/>	
XF4-SEM 4030 LS 75	3	4	9	75	<input checked="" type="checkbox"/>	
XF4-SEM 4040 LS 75	4	4	11	75	<input checked="" type="checkbox"/>	
XF4-SEM 4040 LS 100	4	4	11	100	<input checked="" type="checkbox"/>	
XF6-SEM 4030 LS 75	3	6	9	75	<input checked="" type="checkbox"/>	
XF6-SEM 4040 LS 75	4	6	11	75	<input checked="" type="checkbox"/>	
XF6-SEM 4050 LS 75	5	6	13	75	<input checked="" type="checkbox"/>	
XF6-SEM 4060 LS 75	6	6	16	75	<input checked="" type="checkbox"/>	
XF6-SEM 4040 LS 100	4	6	11	100	<input checked="" type="checkbox"/>	
XF6-SEM 4060 LS 100	6	6	16	100	<input checked="" type="checkbox"/>	
XF8-SEM 4080 LS 75	8	8	20	75	<input checked="" type="checkbox"/>	
XF8-SEM 4080 LS 100	8	8	20	100	<input checked="" type="checkbox"/>	
XF10-SEM 4100 LS 100	10	10	25	100	<input checked="" type="checkbox"/>	
XF10-SEM 4100 LS 150	10	10	25	150	<input checked="" type="checkbox"/>	
XF12-SEM 4120 LS 100	12	12	30	100	<input checked="" type="checkbox"/>	
XF12-SEM 4120 LS 150	12	12	30	150	<input checked="" type="checkbox"/>	
XF16-SEM 4160 LS 150	16	16	40	150	<input checked="" type="checkbox"/>	
XF20-SEM 4200 LS 150	20	20	45	150	<input checked="" type="checkbox"/>	



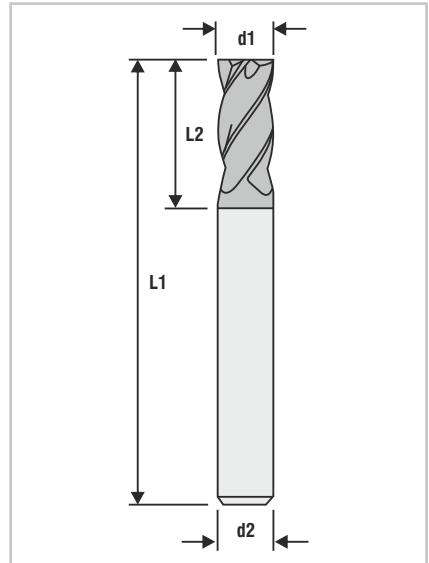
LS
SERIES

AT
COATING



35°

SMG
0.4mm



Tolerance	
Diameter	Range
$3 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

Available EX stock / subject to prior sale
SMG - Super-Fine Micron Grade
LS - Long Shank for deep reach moulds and dies

XF Star 2 (≤ 60 HRC) LS

Flat End Mills - Long Shank Series

Article No.	Dimension (mm)					
	2 Flute	\varnothing d1	\varnothing d2 h10	L2 h6	L1	AT-coated
XF3-SEM 2030 LS 75		3	3	9	75	■
XF4-SEM 2030 LS 75		3	4	9	75	■
XF4-SEM 2040 LS 75		4	4	11	75	■
XF4-SEM 2040 LS 100		4	4	11	100	■
XF6-SEM 2030 LS 75		3	6	9	75	■
XF6-SEM 2040 LS 75		4	6	11	75	■
XF6-SEM 2050 LS 75		5	6	13	75	■
XF6-SEM 2060 LS 75		6	6	16	75	■
XF6-SEM 2040 LS 100		4	6	11	100	■
XF6-SEM 2060 LS 100		6	6	16	100	■
XF8-SEM 2080 LS 75		8	8	20	75	■
XF8-SEM 2080 LS 100		8	8	20	100	■
XF10-SEM 2100 LS 100		10	10	25	100	■
XF10-SEM 2100 LS 150		10	10	25	150	■
XF12-SEM 2120 LS 100		12	12	30	100	■
XF12-SEM 2120 LS 150		12	12	30	150	■
XF16-SEM 2160 LS 150		16	16	40	150	■
XF20-SEM 2200 LS 150		20	20	45	150	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LS - Long Shank for deep reach moulds and dies



X
60
 Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

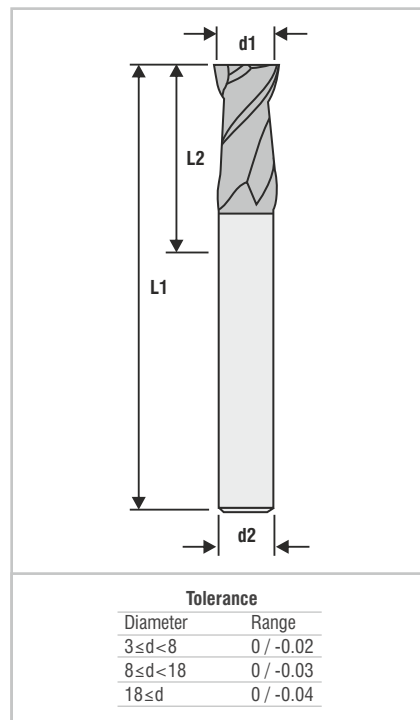
LS
SERIES

AT
COATING

35°

SMG
0.4mm

FLAT
End Mills

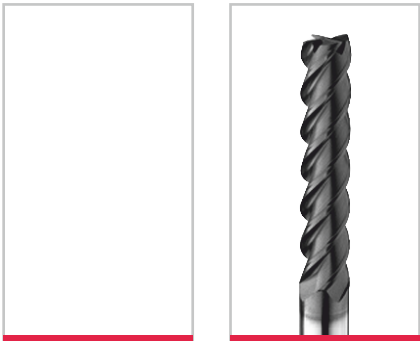


X
60
Series

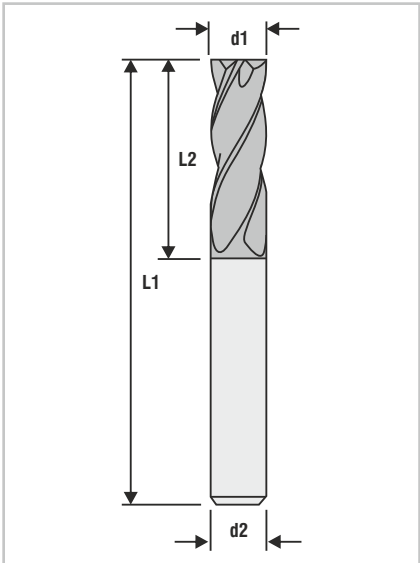
XF Star 4 (≤ 60 HRC) LF
Flat End Mills - Long Flute Series

Article No.	Dimension (mm)					AT-coated
	4 Flute	\varnothing d1	\varnothing d2 h10	L2 h6	L1	
XF3-SEM 4030 LF 75		3	3	12	75	■
XF4-SEM 4030 LF 75		3	4	12	75	■
XF4-SEM 4040 LF 75		4	4	15	75	■
XF6-SEM 4050 LF 75		5	6	20	75	■
XF6-SEM 4060 LF 75		6	6	25	75	■
XF6-SEM 4060 LF 100		6	6	30	100	■
XF8-SEM 4080 LF 100		8	8	40	100	■
XF10-SEM 4100 LF 100		10	10	45	100	■
XF12-SEM 4120 LF 100		12	12	50	100	■
XF16-SEM 4160 LF 150		16	16	75	150	■
XF20-SEM 4200 LF 150		20	20	80	150	■

FLAT
End Mills



Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



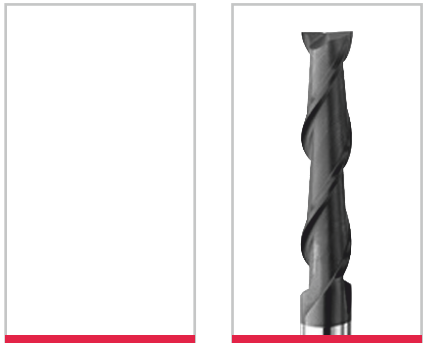
■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LF - Long Flute for long wall moulds and dies

Tolerance	
Diameter	Range
$3 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

XF Star 2 (≤ 60 HRC) LF

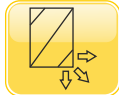
Flat End Mills - Long Flute Series

Article No.	Dimension (mm)					AT-coated
	2 Flute	$\varnothing d1$	$\varnothing d2$ h10	L2 h6	L1	
XF3-SEM 2030 LF 75	3	3	12	75	■	
XF4-SEM 2030 LF 75	3	4	12	75	■	
XF4-SEM 2040 LF 75	4	4	15	75	■	
XF6-SEM 2050 LF 75	5	6	20	75	■	
XF6-SEM 2060 LF 75	6	6	25	75	■	
XF6-SEM 2060 LF 100	6	6	30	100	■	
XF8-SEM 2080 LF 100	8	8	40	100	■	
XF10-SEM 2100 LF 100	10	10	45	100	■	
XF12-SEM 2120 LF 100	12	12	50	100	■	
XF16-SEM 2160 LF 150	16	16	75	150	■	
XF20-SEM 2200 LF 150	20	20	80	150	■	

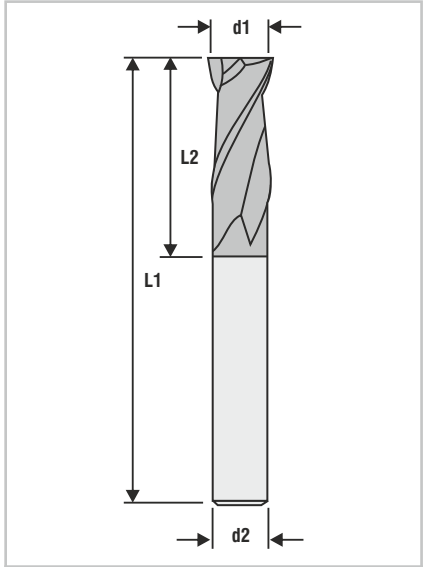


X
60
Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	



FLAT
End Mills



Tolerance	
Diameter	Range
$3 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

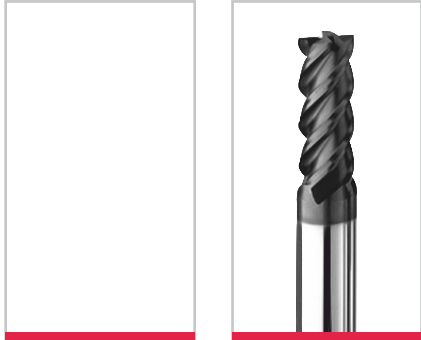
■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LF - Long Flute for long wall moulds and dies

Prostar (≤ 60 HRC)

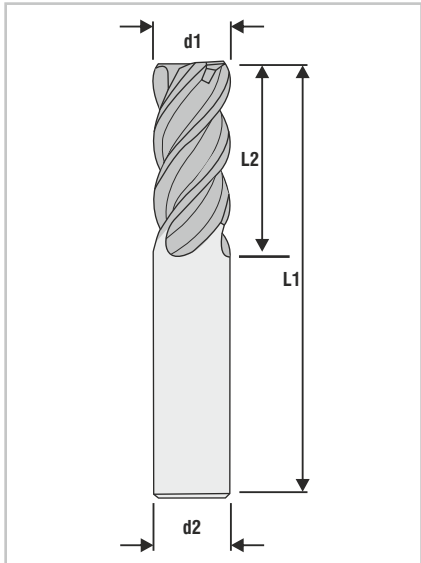
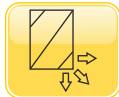
High Performance End Mills – Regular Series

Article No.	Dimension (mm)					
4 Flute	Ø d1 h10	Ø d2 h6	L2	L1	TIS-coated	AT-coated
PRO-SEM 4030	3	6	9	50	■	■
PRO-SEM 4040	4	6	11	50	■	■
PRO-SEM 4050	5	6	13	50	■	■
PRO-SEM 4060	6	6	16	50	■	■
PRO-SEM 4080	8	8	20	60	■	■
PRO-SEM 4100	10	10	25	75	■	■
PRO-SEM 4120	12	12	30	75	■	■
PRO-SEM 4140	14	16	35	100	■	■
PRO-SEM 4160	16	16	40	100	■	■
PRO-SEM 4200	20	20	45	100	■	■

- Available ex stock / subject to prior sale
- **TIS** Coating will be available on request for machining Titanium, Inconel & Stainless steel for above average performance
- SMG** - Super-Fine Micron Grade



Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



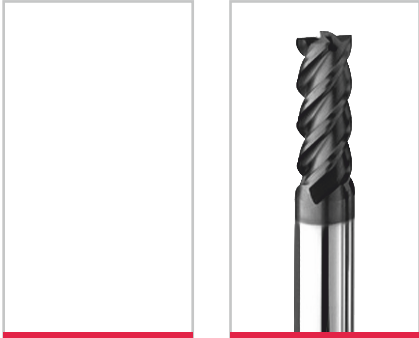
Tolerance	
Diameter	Range
1 ≤ d < 8	0 / -0.02
8 ≤ d < 18	0 / -0.03
18 ≤ d	0 / -0.04

Tristar (≤ 60 HRC)

High Performance End Mills – Regular Series
*Specially Made for Machining Stainless Steel

Article No.	Dimension (mm)							
	4 Flute	$\varnothing d1$ h10	$\varnothing d2$ h6	L2	L1		NR-coated	TIS-coated
TRI-SEM 4010		1	4	3	50		■	■
TRI-SEM 4020		2	4	6	50		■	■
TRI-SEM 4030		3	4	9	50		■	■
TRI-SEM 4040		4	4	11	50		■	■
TRI-SEM 4030		3	6	9	50		■	■
TRI-SEM 4040		4	6	11	50		■	■
TRI-SEM 4050		5	6	13	50		■	■
TRI-SEM 4060		6	6	16	50		■	■
TRI-SEM 4080		8	8	20	60		■	■
TRI-SEM 4100		10	10	25	75		■	■
TRI-SEM 4120		12	12	30	75		■	■
TRI-SEM 4160		16	16	40	100		■	■
TRI-SEM 4200		20	20	45	100		■	■

- Available ex stock / subject to prior sale
- NR Coating will be available on request for machining Titanium, Inconel & Stainless steel for extreme performance
- SMG - Super-Fine Micron Grade



X
60
Series

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

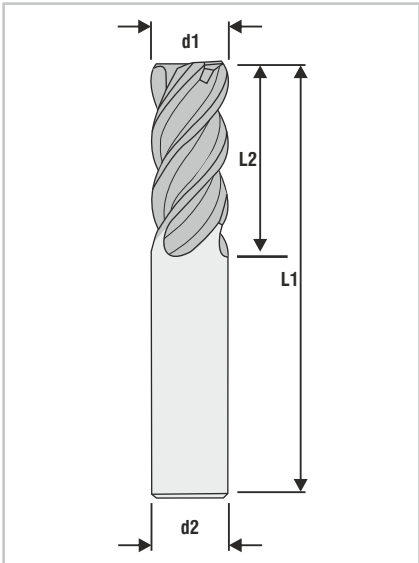
TIS
COATING

NR
COATING

SMG
0.4mm

I 45°

FLAT
End Mills

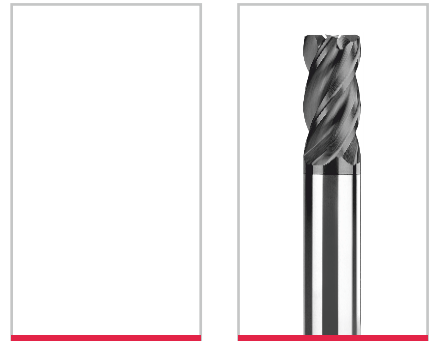


Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

Varistar 40° / 42° (≤ 60 HRC) Unequal Helix and Pitch - HPC

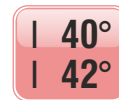
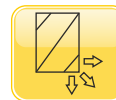
Article No.		Dimension (mm)					TIS-coated	AT-coated
4 Flute		\varnothing d1 h10	\varnothing d2 h6	L2	L1			
VA-SEM 4030	40° / 42°	3	3	15	50	■	■	
VA-SEM 4040	40° / 42°	4	4	15	50	■	■	
VA-SEM 4050	40° / 42°	5	6	13	50	■	■	
VA-SEM 4060	40° / 42°	6	6	15	50	■	■	
VA-SEM 4080	40° / 42°	8	8	20	60	■	■	
VA-SEM 4100	40° / 42°	10	10	25	75	■	■	
VA-SEM 4120	40° / 42°	12	12	30	75	■	■	
VA-SEM 4160	40° / 42°	16	16	40	100	■	■	
VA-SEM 4200	40° / 42°	20	20	45	100	■	■	

- Available ex stock / subject to prior sale
- TIS Coating will be available on request for machining Titanium, Inconel & Stainless steel for above average performance
- SMG** - Super-Fine Micron Grade

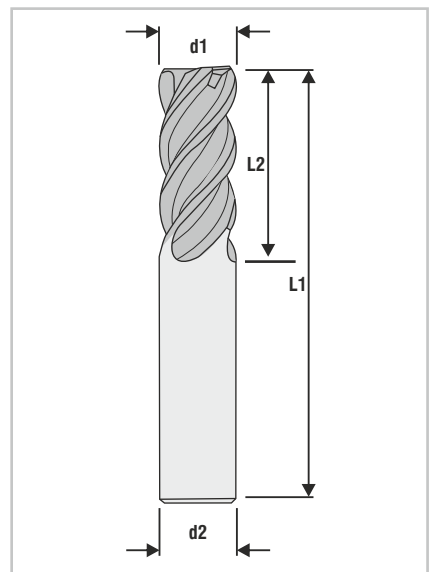


**X
60
Series**

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



**FLAT
End Mills**



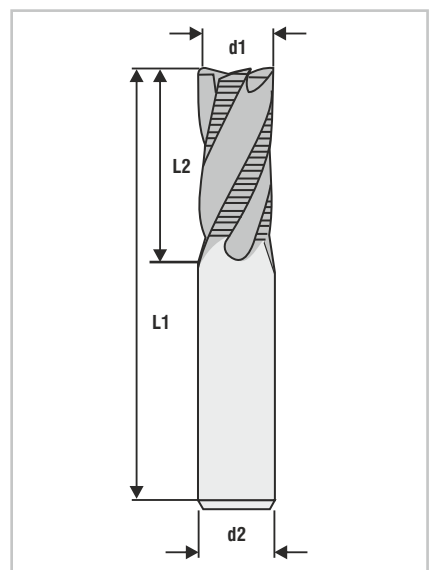
Tolerance	
Diameter	Range
3 ≤ d < 8	0 / -0.02
8 ≤ d < 18	0 / -0.03
20 ≤ d	0 / -0.04

X 60
Series

Hulkstar (≤ 60 HRC)
Roughing Endmills For Steel - Regular Series



Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	



Tolerance	
Diameter	Range
$6 \leq d < 18$	0 / -0.03
$20 \leq d$	0 / -0.04

Article No.		Dimension (mm)					AT-coated
4 Flutes <i>Coarse Pitch</i>	3 Flutes <i>Coarse Pitch</i>	$\varnothing d1$ h10	$\varnothing d2$ h6	L2	L1		
RC-SEM 4060	RC-SEM 3060	6	6	16	50	■	
RC-SEM 4080	RC-SEM 3080	8	8	20	60	■	
RC-SEM 4100	RC-SEM 3100	10	10	25	75	■	
RC-SEM 4120	RC-SEM 3120	12	12	30	75	■	
RC-SEM 4160	RC-SEM 3160	16	16	40	100	■	
RC-SEM 4200	RC-SEM 3200	20	20	45	100	■	

Article No.		Dimension (mm)					AT-coated
4 Flutes <i>Fine Pitch</i>	3 Flutes <i>Fine Pitch</i>	$\varnothing d1$ h10	$\varnothing d2$ h6	L2	L1		
RF-SEM 4060	RF-SEM 3060	6	6	16	50	■	
RF-SEM 4080	RF-SEM 3080	8	8	20	60	■	
RF-SEM 4100	RF-SEM 3100	10	10	25	75	■	
RF-SEM 4120	RF-SEM 3120	12	12	30	75	■	
RF-SEM 4160	RF-SEM 3160	16	16	40	100	■	
RF-SEM 4200	RF-SEM 3200	20	20	45	100	■	

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade

FLAT
End Mills

Microstar FM (≤ 60 HRC)

Flat End Mills - Regular Series

Article No.	Dimension (mm)					
2 Flute	\varnothing d1 h10	\varnothing d2 h6	L2	L1	AT-coated	
M-SEM 2002	0.2	4	0.4	50	<input checked="" type="checkbox"/>	
M-SEM 2003	0.3	4	0.6	50	<input checked="" type="checkbox"/>	
M-SEM 2004	0.4	4	0.8	50	<input checked="" type="checkbox"/>	
M-SEM 2005	0.5	4	1	50	<input checked="" type="checkbox"/>	
M-SEM 2006	0.6	4	1.2	50	<input checked="" type="checkbox"/>	
M-SEM 2007	0.7	4	1.4	50	<input checked="" type="checkbox"/>	
M-SEM 2008	0.8	4	1.6	50	<input checked="" type="checkbox"/>	
M-SEM 2009	0.9	4	1.8	50	<input checked="" type="checkbox"/>	

Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade

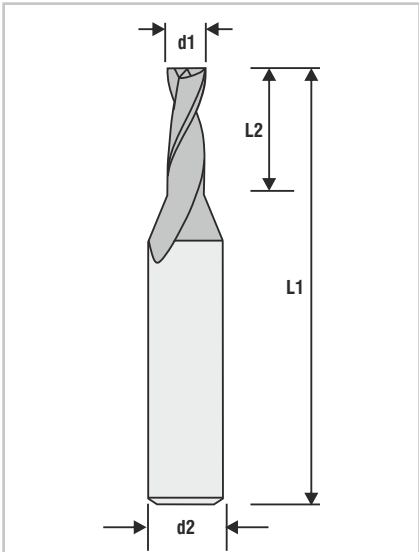


X
60
Series

Steel	R _m < 850	<input checked="" type="checkbox"/>
	R _m 850-1300	<input checked="" type="checkbox"/>
	R _m 1300-1500	<input checked="" type="checkbox"/>
M	Stainless Steel	<input type="checkbox"/>
K	Cast Iron	<input checked="" type="checkbox"/>
N	Copper	<input type="checkbox"/>
S	Titanium	<input checked="" type="checkbox"/>
Hardened Steel	HRC 48-55	<input checked="" type="checkbox"/>
	HRC 56-60	<input type="checkbox"/>
	HRC > 60	<input type="checkbox"/>



FLAT
End Mills



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$18 \leq d$	0 / -0.04

**X
60**
Series

XFL Star 4 (≤ 60 HRC) LN

Flat End Mills - Long Neck Series



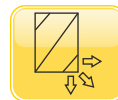
Article No.	Dimension (mm)					
	4 Flute	\varnothing d1	\varnothing d2 h10	L2	L3 h6	L1
XFL4-SEM 4010 LN6	1	4	1	6	50	■
XFL4-SEM 4010 LN8	1	4	1	8	50	■
XFL4-SEM 4010 LN10	1	4	1	10	50	■
XFL4-SEM 4010 LN12	1	4	1	12	50	■
XFL4-SEM 4015 LN8	1.5	4	1.5	8	50	■
XFL4-SEM 4015 LN10	1.5	4	1.5	10	50	■
XFL4-SEM 4015 LN12	1.5	4	1.5	12	50	■
XFL4-SEM 4015 LN16	1.5	4	1.5	16	50	■
XFL4-SEM 4020 LN8	2.0	4	2.0	8	50	■
XFL4-SEM 4020 LN10	2.0	4	2.0	10	50	■
XFL4-SEM 4020 LN12	2.0	4	2.0	12	50	■
XFL4-SEM 4020 LN16	2.0	4	2.0	16	50	■
XFL4-SEM 4020 LN20	2.0	4	2.0	20	50	■
XFL4-SEM 4025 LN10	2.5	4	2.5	10	50	■
XFL4-SEM 4025 LN12	2.5	4	2.5	12	50	■
XFL4-SEM 4025 LN16	2.5	4	2.5	16	50	■
XFL4-SEM 4025 LN20	2.5	4	2.5	20	50	■
XFL6-SEM 4030 LN12	3.0	6	3.0	12	50	■
XFL6-SEM 4030 LN16	3.0	6	3.0	16	50	■
XFL6-SEM 4030 LN20	3.0	6	3.0	20	75	■
XFL6-SEM 4030 LN25	3.0	6	3.0	25	75	■

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	



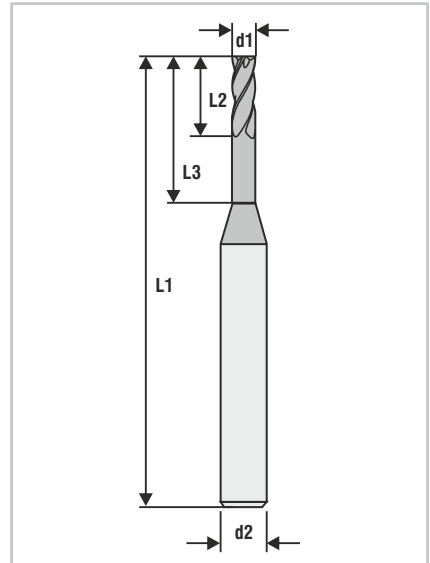
LN
SERIES

AT
COATING



35°

SMG
0.4mm



Tolerance	
Diameter	Range
$1 \leq d < 8$	$0 / -0.02$

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies

FLAT
End Mills

XFL Star 2 (≤ 60 HRC) LN
Flat End Mills - Long Neck Series

Article No.	Dimension (mm)					
	2 Flute	$\varnothing d1$	$\varnothing d2$ h10	L2	L3 h6	L1
XFL4-SEM 2010 LN6	1	4	1	6	50	■
XFL4-SEM 2010 LN8	1	4	1	8	50	■
XFL4-SEM 2010 LN10	1	4	1	10	50	■
XFL4-SEM 2010 LN12	1	4	1	12	50	■
XFL4-SEM 2015 LN8	1.5	4	1.5	8	50	■
XFL4-SEM 2015 LN10	1.5	4	1.5	10	50	■
XFL4-SEM 2015 LN12	1.5	4	1.5	12	50	■
XFL4-SEM 2015 LN16	1.5	4	1.5	16	50	■
XFL4-SEM 2020 LN8	2.0	4	2.0	8	50	■
XFL4-SEM 2020 LN10	2.0	4	2.0	10	50	■
XFL4-SEM 2020 LN12	2.0	4	2.0	12	50	■
XFL4-SEM 2020 LN16	2.0	4	2.0	16	50	■
XFL4-SEM 2020 LN20	2.0	4	2.0	20	50	■
XFL4-SEM 2025 LN10	2.5	4	2.5	10	50	■
XFL4-SEM 2025 LN12	2.5	4	2.5	12	50	■
XFL4-SEM 2025 LN16	2.5	4	2.5	16	50	■
XFL4-SEM 2025 LN20	2.5	4	2.5	20	50	■
XFL6-SEM 2030 LN12	3.0	6	3.0	12	50	■
XFL6-SEM 2030 LN16	3.0	6	3.0	16	50	■
XFL6-SEM 2030 LN20	3.0	6	3.0	20	75	■
XFL6-SEM 2030 LN25	3.0	6	3.0	25	75	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies



X
60
Series

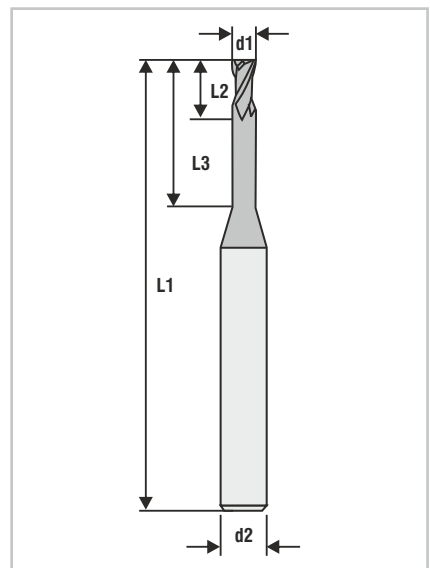
Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

LN
SERIES

AT
COATING

35°

SMG
0.4mm

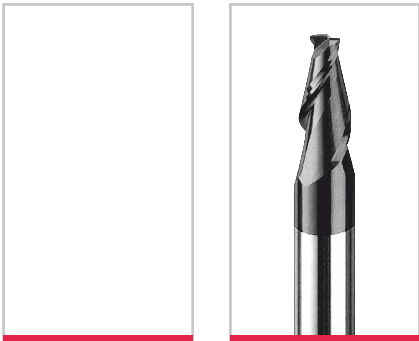


Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02

FLAT
End Mills

**X
60
Series**

XFN Star 2 (≤60 HRC) TEM
Flat Tapered End Mills



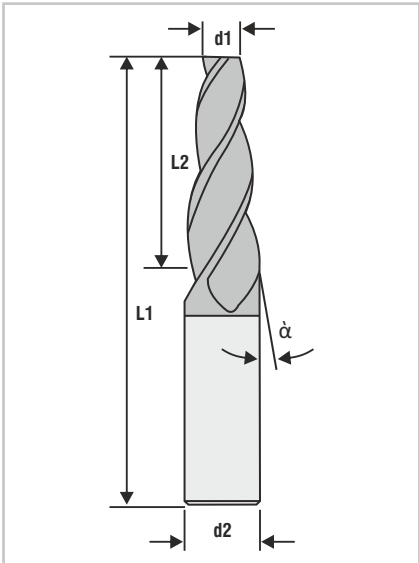
Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	□
K	Cast Iron	□
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

TEM
SERIES

AT
COATING

35°

SMG
0.4mm



Tolerance	
Diameter	Range
1 ≤ d < 8	0 / -0.02

Article No.	Dimension (mm)					
	2 Flute	Ø d1 h10	Ø d2 h6	L2	α TA	L1
XFN4-TEM 2010 TA 0.5	1	4	4	30'	50	■
XFN4-TEM 2010 TA 1.0	1	4	4	1°	50	■
XFN4-TEM 2010 TA 1.5	1	4	4	1° 30'	50	■
XFN4-TEM 2010 TA 2.0	1	4	4	2°	50	■
XFN4-TEM 2010 TA 2.5	1	4	4	2° 30'	50	■
XFN4-TEM 2010 TA 3.0	1	4	4	3°	50	■
XFN4-TEM 2010 TA 5.0	1	4	4	5°	50	■
XFN4-TEM 2010 TA 7.0	1	4	4	7°	50	■
XFN4-TEM 2010 TA 10.0	1	4	4	10°	50	■
XFN4-TEM 2015 TA 0.5	1.5	4	5	30'	50	■
XFN4-TEM 2015 TA 1.0	1.5	4	5	1°	50	■
XFN4-TEM 2015 TA 1.5	1.5	4	5	1° 30'	50	■
XFN4-TEM 2015 TA 2.0	1.5	4	5	2°	50	■
XFN4-TEM 2015 TA 2.5	1.5	4	5	2° 30'	50	■
XFN4-TEM 2015 TA 3.0	1.5	4	5	3°	50	■
XFN4-TEM 2015 TA 5.0	1.5	4	5	5°	50	■
XFN4-TEM 2015 TA 7.0	1.5	4	5	7°	50	■
XFN4-TEM 2015 TA 10.0	1.5	4	5	10°	50	■
XFN4-TEM 2020 TA 0.5	2	4	6	30'	50	■
XFN4-TEM 2020 TA 1.0	2	4	6	1°	50	■
XFN4-TEM 2020 TA 1.5	2	4	6	1° 30'	50	■
XFN4-TEM 2020 TA 2.0	2	4	6	2°	50	■
XFN4-TEM 2020 TA 2.5	2	4	6	2° 30'	50	■
XFN4-TEM 2020 TA 3.0	2	4	6	3°	50	■
XFN4-TEM 2020 TA 5.0	2	4	6	5°	50	■
XFN4-TEM 2020 TA 7.0	2	4	6	7°	50	■
XFN6-TEM 2020 TA 10.0	2	6	6	10°	50	■
XFN4-TEM 2025 TA 0.5	2.5	4	8	30'	50	■
XFN4-TEM 2025 TA 1.0	2.5	4	8	1°	50	■
XFN4-TEM 2025 TA 1.5	2.5	4	8	1° 30'	50	■
XFN4-TEM 2025 TA 2.0	2.5	4	8	2°	50	■
XFN4-TEM 2025 TA 2.5	2.5	4	8	2° 30'	50	■
XFN4-TEM 2025 TA 3.0	2.5	4	8	3°	50	■
XFN4-TEM 2025 TA 5.0	2.5	4	8	5°	50	■
XFN6-TEM 2025 TA 7.0	2.5	6	8	7°	50	■
XFN6-TEM 2025 TA 10.0	2.5	6	8	10°	50	■

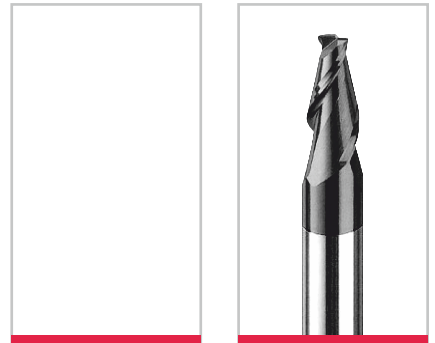
■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
TEM - Taper End mills
TA - Taper angle

XFN Star 2 (≤ 60 HRC) TEM

Flat Tapered End Mills

Article No.	Dimension (mm)					
	2 Flute	\varnothing d1 h10	\varnothing d2 h6	L2	α TA	L1
XFN4-TEM 2030 TA 0.5	3	4	10	30'	50	■
XFN4-TEM 2030 TA 1.0	3	4	10	1°	50	■
XFN4-TEM 2030 TA 1.5	3	4	10	1° 30'	50	■
XFN4-TEM 2030 TA 2.0	3	4	10	2°	50	■
XFN4-TEM 2030 TA 2.5	3	4	10	2° 30'	50	■
XFN6-TEM 2030 TA 3.0	3	6	10	3°	50	■
XFN6-TEM 2030 TA 5.0	3	6	10	5°	50	■
XFN6-TEM 2030 TA 7.0	3	6	10	7°	50	■
XFN8-TEM 2030 TA 10.0	3	8	10	10°	60	■
XFN6-TEM 2040 TA 0.5	4	6	15	30'	50	■
XFN6-TEM 2040 TA 1.0	4	6	15	1°	50	■
XFN6-TEM 2040 TA 1.5	4	6	15	1° 30'	50	■
XFN6-TEM 2040 TA 2.0	4	6	15	2°	50	■
XFN6-TEM 2040 TA 2.5	4	6	15	2° 30'	50	■
XFN6-TEM 2040 TA 3.0	4	6	15	3°	50	■
XFN8-TEM 2040 TA 5.0	4	8	15	5°	60	■
XFN8-TEM 2040 TA 7.0	4	8	15	7°	60	■
XFN10-TEM 2040 TA 10.0	4	10	15	10°	75	■
XFN6-TEM 2050 TA 0.5	5	6	20	30'	50	■
XFN6-TEM 2050 TA 1.0	5	6	20	1°	50	■
XFN6-TEM 2050 TA 1.5	5	6	20	1° 30'	50	■
XFN8-TEM 2050 TA 2.0	5	8	20	2°	60	■
XFN8-TEM 2050 TA 2.5	5	8	20	2° 30'	60	■
XFN8-TEM 2050 TA 3.0	5	8	20	3°	60	■
XFN10-TEM 2050 TA 5.0	5	10	20	5°	75	■
XFN10-TEM 2050 TA 7.0	5	10	20	7°	75	■
XFN12-TEM 2050 TA 10.0	5	12	20	10°	75	■
XFN8-TEM 2060 TA 0.5	6	8	20	30'	60	■
XFN8-TEM 2060 TA 1.0	6	8	20	1°	60	■
XFN8-TEM 2060 TA 1.5	6	8	20	1° 30'	60	■
XFN8-TEM 2060 TA 2.0	6	8	20	2°	60	■
XFN8-TEM 2060 TA 2.5	6	8	20	2° 30'	60	■
XFN8-TEM 2060 TA 3.0	6	8	20	3°	60	■
XFN10-TEM 2060 TA 5.0	6	10	20	5°	75	■
XFN12-TEM 2060 TA 7.0	6	12	20	7°	75	■
XFN12-TEM 2060 TA 10.0	6	12	20	10°	75	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
TEM - Taper End mills
TA - Taper angle



X
60
Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	□
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

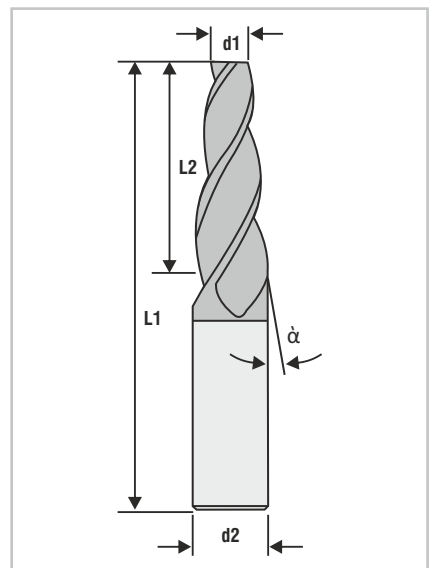
TEM
SERIES

AT
COATING

35°

SMG
0.4mm

FLAT
End Mills



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02

X
60
Series

XFN Star 2 (≤ 60 HRC) TEM
Flat Tapered End Mills



Material	Hardness / Material	Availability
Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	□
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

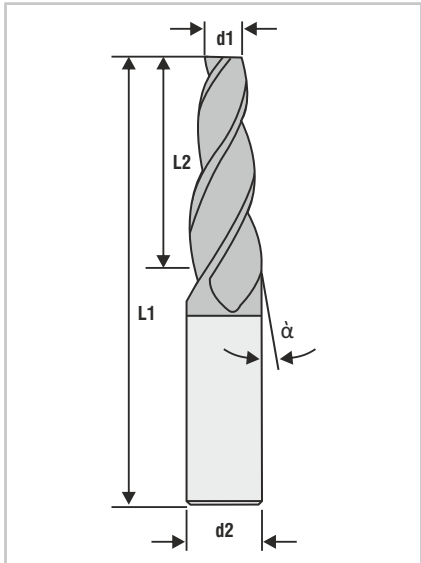
Article No.	Dimension (mm)					
	\varnothing d1 h10	\varnothing d2 h6	L2	α TA	L1	AT-coated
2 Flute						
XFN10-TEM 2080 TA 0.5	8	10	25	30'	75	■
XFN10-TEM 2080 TA 1.0	8	10	25	1°	75	■
XFN10-TEM 2080 TA 1.5	8	10	25	1° 30'	75	■
XFN10-TEM 2080 TA 2.0	8	10	25	2°	75	■
XFN10-TEM 2080 TA 2.5	8	10	25	2° 30'	75	■
XFN12-TEM 2080 TA 3.0	8	12	25	3°	75	■
XFN12-TEM 2080 TA 5.0	8	12	25	5°	75	■
XFN12-TEM 2080 TA 7.0	8	12	25	7°	75	■
XFN16-TEM 2080 TA 10.0	8	16	25	10°	100	■
XFN12-TEM 2100 TA 0.5	10	12	35	30'	100	■
XFN12-TEM 2100 TA 1.0	10	12	35	1°	100	■
XFN12-TEM 2100 TA 1.5	10	12	35	1° 30'	100	■
XFN12-TEM 2100 TA 2.0	10	12	35	2°	100	■
XFN12-TEM 2100 TA 2.5	10	12	35	2° 30'	100	■
XFN12-TEM 2100 TA 3.0	10	12	35	3°	100	■
XFN16-TEM 2100 TA 5.0	10	16	35	5°	100	■
XFN16-TEM 2100 TA 7.0	10	16	35	7°	100	■
XFN20-TEM 2100 TA 10.0	10	20	35	10°	100	■

TEM
SERIES

AT
COATING

35°

SMG
0.4mm



Tolerance	
Diameter	Range
$8 \leq d < 18$	0 / -0.03

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
TEM - Taper End mills
TA - Taper angle

FLAT
End Mills

XB Star 4 / 2 (≤60 HRC)
Ball Nose End Mills - Regular Series

Article No.		Dimension (mm)					
4 Flute	2 Flutes	∅ d1 h10	∅ d2 h6	L2	L1	AT-coated	
XB4-SBM 4010	XB4-SBM 2010	R0.50	4	2	50	■	
XB4-SBM 4015	XB4-SBM 2015	R0.75	4	3	50	■	
XB4-SBM 4020	XB4-SBM 2020	R1.00	4	4	50	■	
XB4-SBM 4025	XB4-SBM 2025	R1.25	4	5	50	■	
XB4-SBM 4030	XB4-SBM 2030	R1.50	4	6	50	■	
XB4-SBM 4040	XB4-SBM 2040	R2.00	4	8	50	■	
XB6-SBM 4050	XB6-SBM 2050	R2.50	6	10	50	■	
XB6-SBM 4060	XB6-SBM 2060	R3.00	6	12	50	■	
XB8-SBM 4070	XB8-SBM 2070	R3.50	8	12	60	■	
XB8-SBM 4080	XB8-SBM 2080	R4.00	8	16	60	■	
XB10-SBM 4090	XB10-SBM 2090	R4.50	10	18	75	■	
XB10-SBM 4100	XB10-SBM 2100	R5.00	10	20	75	■	
XB12-SBM 4120	XB12-SBM 2120	R6.00	12	24	75	■	
XB16-SBM 4160	XB16-SBM 2160	R8.00	16	32	100	■	
XB20-SBM 4200	XB20-SBM 2200	R10.0	20	40	100	■	

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade



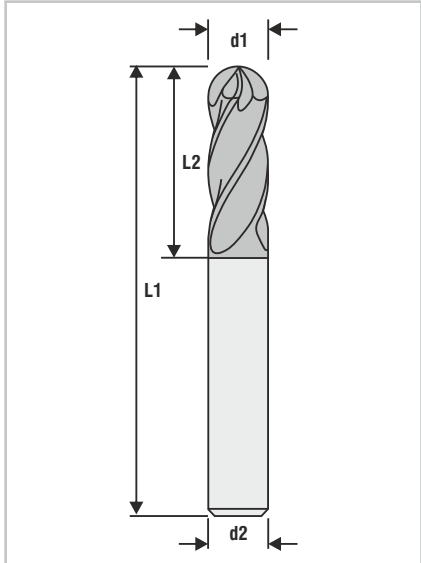
X
60
Series

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

AT
COATING

| 30°

SMG
0.4mm



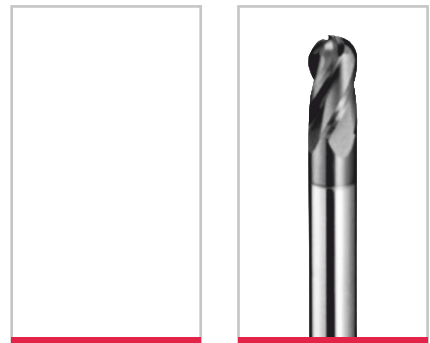
Tolerance

Diameter	Range
1 ≤ d < 8	0 / -0.02
8 ≤ d < 18	0 / -0.03
20 ≤ d	0 / -0.04

BALL
End Mills

**X
60
Series**

XB Star 4 (≤ 60 HRC) LS
Ball Nose End Mills - Long Shank Series



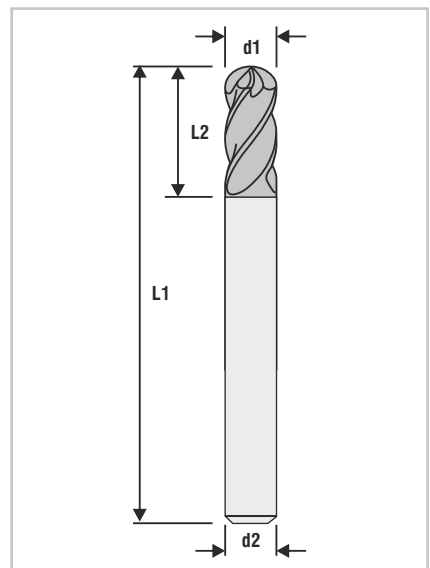
Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

LS
SERIES

AT
COATING

30°

SMG
0.4mm



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$20 \leq d$	0 / -0.04

Article No.	Dimension (mm)					AT-coated
	4 Flute	$\varnothing d1$ h10	$\varnothing d2$ h6	L2	L1	
XB4-SBM 4010 LS 75		R0.50	4	2	75	■
XB4-SBM 4015 LS 75		R0.75	4	3	75	■
XB4-SBM 4020 LS 75		R1.00	4	4	75	■
XB3-SBM 4030 LS 75		R1.50	3	6	75	■
XB4-SBM 4030 LS 75		R1.50	4	6	75	■
XB4-SBM 4040 LS 75		R2.00	4	8	75	■
XB4-SBM 4040 LS 100		R2.00	4	8	100	■
XB5-SBM 4050 LS 75		R2.50	5	10	75	■
XB5-SBM 4050 LS 100		R2.50	5	10	100	■
XB6-SBM 4020 LS 75		R1.00	6	4	75	■
XB6-SBM 4030 LS 75		R1.50	6	6	75	■
XB6-SBM 4040 LS 75		R2.00	6	8	75	■
XB6-SBM 4050 LS 75		R2.50	6	10	75	■
XB6-SBM 4060 LS 75		R3.00	6	12	75	■
XB6-SBM 4040 LS 100		R2.00	6	8	100	■
XB6-SBM 4050 LS 100		R2.50	6	10	100	■
XB6-SBM 4060 LS 100		R3.00	6	12	100	■
XB8-SBM 4080 LS 75		R4.00	8	16	75	■
XB8-SBM 4080 LS 100		R4.00	8	16	100	■
XB10-SBM 4100 LS 100		R5.00	10	20	100	■
XB10-SBM 4100 LS 150		R5.00	10	20	150	■
XB12-SBM 4120 LS 100		R6.00	12	24	100	■
XB12-SBM 4120 LS 150		R6.00	12	24	150	■
XB16-SBM 4160 LS 150		R8.00	16	32	150	■
XB20-SBM 4200 LS 150		R10.0	20	40	150	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LS - Long Shank for deep reach moulds and dies

XB Star 2 (≤ 60 HRC) LS Ball Nose End Mills - Long Shank Series

Article No.	Dimension (mm)					AT-coated
	2 Flutes	\varnothing d1 h10	\varnothing d2 h6	L2	L1	
XB4-SBM 2010 LS 75		R0.50	4	2	75	■
XB4-SBM 2015 LS 75		R0.75	4	3	75	■
XB4-SBM 2020 LS 75		R1.00	4	4	75	■
XB3-SBM 2030 LS 75		R1.50	3	6	75	■
XB4-SBM 2030 LS 75		R1.50	4	6	75	■
XB4-SBM 2040 LS 75		R2.00	4	8	75	■
XB4-SBM 2040 LS 100		R2.00	4	8	100	■
XB5-SBM 2050 LS 75		R2.50	5	10	75	■
XB5-SBM 2050 LS 100		R2.50	5	10	100	■
XB6-SBM 2020 LS 75		R1.00	6	4	75	■
XB6-SBM 2030 LS 75		R1.50	6	6	75	■
XB6-SBM 2040 LS 75		R2.00	6	8	75	■
XB6-SBM 2050 LS 75		R2.50	6	10	75	■
XB6-SBM 2060 LS 75		R3.00	6	12	75	■
XB6-SBM 2040 LS 100		R2.00	6	8	100	■
XB6-SBM 2050 LS 100		R2.50	6	10	100	■
XB6-SBM 2060 LS 100		R3.00	6	12	100	■
XB8-SBM 2080 LS 75		R4.00	8	16	75	■
XB8-SBM 2080 LS 100		R4.00	8	16	100	■
XB10-SBM 2100 LS 100		R5.00	10	20	100	■
XB10-SBM 2100 LS 150		R5.00	10	20	150	■
XB12-SBM 2120 LS 100		R6.00	12	24	100	■
XB12-SBM 2120 LS 150		R6.00	12	24	150	■
XB16-SBM 2160 LS 150		R8.00	16	32	150	■
XB20-SBM 2200 LS 150		R10.0	20	40	150	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LS - Long Shank for deep reach moulds and dies



X
60
Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

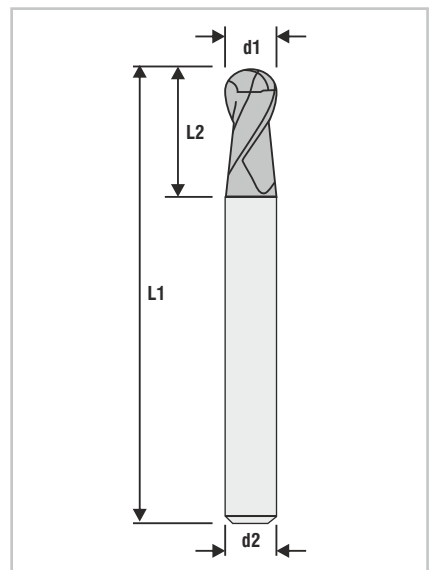
LS
SERIES

AT
COATING

30°

SMG
0.4mm

BALL
End Mills



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03
$20 \leq d$	0 / -0.04

Microstar BM (≤ 60 HRC)

Ball Nose End Mills - Regular Series

Article No.	Dimension (mm)					
	2 Flute	\varnothing d1 h10	\varnothing d2 h6	L2	L1	AT-coated
M-SBM 2003		R0.15	4	0.6	50	■
M-SBM 2004		R0.20	4	0.8	50	■
M-SBM 2005		R0.25	4	1	50	■
M-SBM 2006		R0.30	4	1.2	50	■
M-SBM 2007		R0.35	4	1.4	50	■
M-SBM 2008		R0.40	4	1.6	50	■
M-SBM 2009		R0.45	4	1.8	50	■

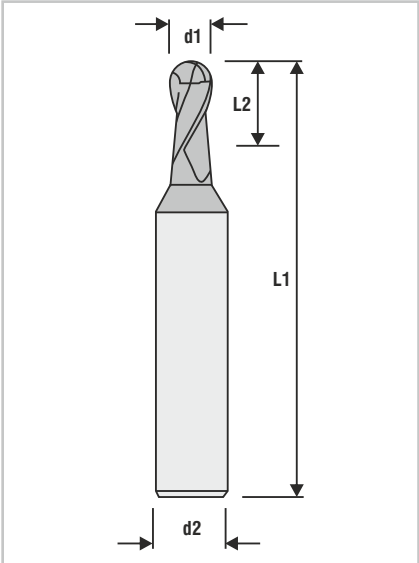


Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

**AT
COATING**

λ 30°

**SMG
0.4mm**



■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade

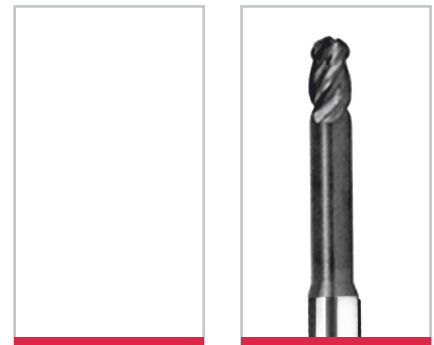
Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02

XBL Star 4 (≤ 60 HRC) LN

Ball Nose End Mill - Long Neck Series

Article No.	Dimension (mm)					
4 Flute	$\varnothing d1$ h10	$\varnothing d2$ h6	L2	L3	L1	AT-coated
XBL4-SBM 4010 LN6	R0.50	4	1	6	50	■
XBL4-SBM 4010 LN8	R0.50	4	1	8	50	■
XBL4-SBM 4010 LN10	R0.50	4	1	10	50	■
XBL4-SBM 4010 LN12	R0.50	4	1	12	50	■
XBL4-SBM 4015 LN8	R0.75	4	1.5	8	50	■
XBL4-SBM 4015 LN12	R0.75	4	1.5	12	50	■
XBL4-SBM 4015 LN16	R0.75	4	1.5	16	50	■
XBL4-SBM 4015 LN20	R0.75	4	1.5	20	50	■
XBL4-SBM 4016 LN8	R0.80	4	1.6	8	50	■
XBL4-SBM 4016 LN12	R0.80	4	1.6	12	50	■
XBL4-SBM 4016 LN16	R0.80	4	1.6	16	50	■
XBL4-SBM 4020 LN8	R1.00	4	2.0	8	50	■
XBL4-SBM 4020 LN12	R1.00	4	2.0	12	50	■
XBL4-SBM 4020 LN16	R1.00	4	2.0	16	50	■
XBL4-SBM 4020 LN20	R1.00	4	2.0	20	50	■
XBL6-SBM 4030 LN8	R1.50	6	3.0	8	50	■
XBL6-SBM 4030 LN10	R1.50	6	3.0	10	50	■
XBL6-SBM 4030 LN16	R1.50	6	3.0	16	50	■
XBL6-SBM 4040 LN10	R2.00	6	4.0	10	75	■
XBL6-SBM 4040 LN15	R2.00	6	4.0	15	75	■
XBL6-SBM 4040 LN20	R2.00	6	4.0	20	75	■
XBL6-SBM 4040 LN25	R2.00	6	4.0	25	75	■
XBL6-SBM 4040 LN30	R2.00	6	4.0	30	75	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies



X
60
 Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



LN
SERIES

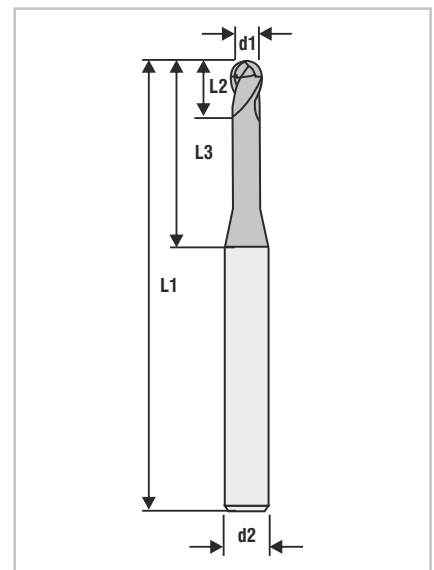
AT
COATING



30°

SMG
0.4mm

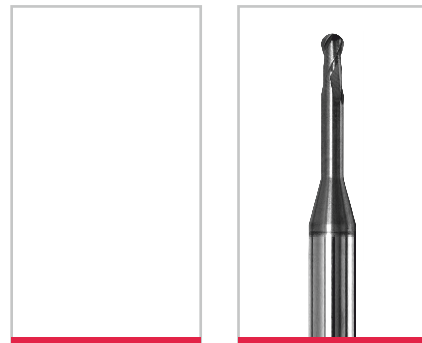
BALL
End Mills



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02

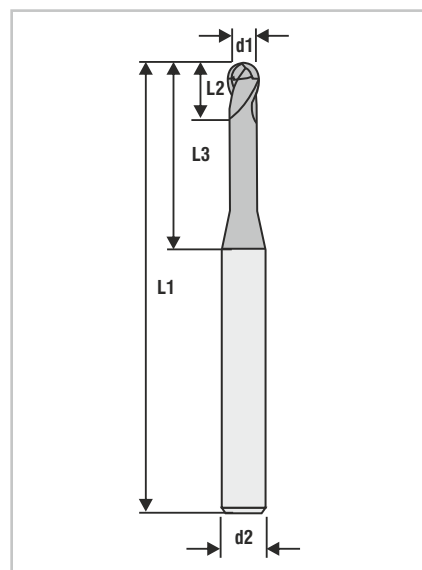
X
60
Series

XBL Star 2 (≤60 HRC) LN
Ball Nose End Mill - Long Neck Series



Article No.	Dimension (mm)					
	2 Flute	Ø d1 h10	Ø d2 h6	L2	L3	L1
XBL4-SBM 2010 LN6	R0.50	4	1	6	50	■
XBL4-SBM 2010 LN8	R0.50	4	1	8	50	■
XBL4-SBM 2010 LN10	R0.50	4	1	10	50	■
XBL4-SBM 2010 LN12	R0.50	4	1	12	50	■
XBL4-SBM 2015 LN8	R0.75	4	1.5	8	50	■
XBL4-SBM 2015 LN12	R0.75	4	1.5	12	50	■
XBL4-SBM 2015 LN16	R0.75	4	1.5	16	50	■
XBL4-SBM 2015 LN20	R0.75	4	1.5	20	50	■
XBL4-SBM 2016 LN8	R0.80	4	1.6	8	50	■
XBL4-SBM 2016 LN12	R0.80	4	1.6	12	50	■
XBL4-SBM 2016 LN16	R0.80	4	1.6	16	50	■
XBL4-SBM 2020 LN8	R1.00	4	2.0	8	50	■
XBL4-SBM 2020 LN12	R1.00	4	2.0	12	50	■
XBL4-SBM 2020 LN16	R1.00	4	2.0	16	50	■
XBL4-SBM 2020 LN20	R1.00	4	2.0	20	50	■
XBL6-SBM 2030 LN8	R1.50	6	3.0	8	50	■
XBL6-SBM 2030 LN10	R1.50	6	3.0	10	50	■
XBL6-SBM 2030 LN16	R1.50	6	3.0	16	50	■
XBL6-SBM 2040 LN10	R2.00	6	4.0	10	75	■
XBL6-SBM 2040 LN15	R2.00	6	4.0	15	75	■
XBL6-SBM 2040 LN20	R2.00	6	4.0	20	75	■
XBL6-SBM 2040 LN25	R2.00	6	4.0	25	75	■
XBL6-SBM 2040 LN30	R2.00	6	4.0	30	75	■

Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



Tolerance	
Diameter	Range
1 ≤ d < 8	0 / -0.02

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies

BALL
End Mills



XBN Star 2 (≤ 60 HRC) LTN

Ball Nose End Mill - Long Taper Neck Series

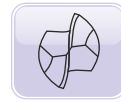
Article No.	Dimension (mm)						
	\varnothing d1 h10	\varnothing d2 h6	L2	α TA	L3 TN	L1	AT-coated
2 Flute							
XBN6-SBM 2010 TA3 -75	R0.50	6	2	3°	32	75	■
XBN6-SBM 2010 TA5 -75	R0.50	6	2	5°	32	75	■
XBN6-SBM 2020 TA3 -100	R1.00	6	4	3°	27	100	■
XBN6-SBM 2020 TA5 -100	R1.00	6	4	5°	27	100	■
XBN6-SBM 2030 TA1.5 -100	R1.50	6	6	1.5°	35	100	■
XBN6-SBM 2030 TA3 - 100	R1.50	6	6	3°	35	100	■
XBN6-SBM 2040 TA1.5 -100	R2.00	6	8	1.5°	28	100	■
XBN6-SBM 2040 TA3 - 100	R2.00	6	8	3°	28	100	■
XBN8-SBM 2060 TA3 -100	R3.00	8	12	3°	32	100	■
XBN8-SBM 2060 TA3 -150	R3.00	8	12	3°	32	150	■
XBN10-SBM 2060 TA5 -100	R3.00	10	12	5°	35	100	■
XBN10-SBM 2060 TA5 -150	R3.00	10	12	5°	35	150	■
XBN10-SBM 2080 TA3 -100	R4.00	10	16	3°	36	100	■
XBN10-SBM 2080 TA3 -150	R4.00	10	16	3°	36	150	■
XBN12-SBM 2080 TA5 -100	R4.00	12	16	5°	39	100	■
XBN12-SBM 2080 TA5 -150	R4.00	12	16	5°	39	150	■
XBN12-SBM 2100 TA3 -100	R5.00	12	20	3°	40	100	■
XBN12-SBM 2100 TA3 -150	R5.00	12	20	3°	40	150	■
XBN16-SBM 2120 TA5 -100	R6.00	16	24	5°	47	100	■
XBN16-SBM 2120 TA5 -150	R6.00	16	24	5°	47	150	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LTN - Long Taper neck Endmills for deep reach moulds
TA - Taper angle, **TN** - Taper neck



X
60
Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	□
K	Cast Iron	■
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	



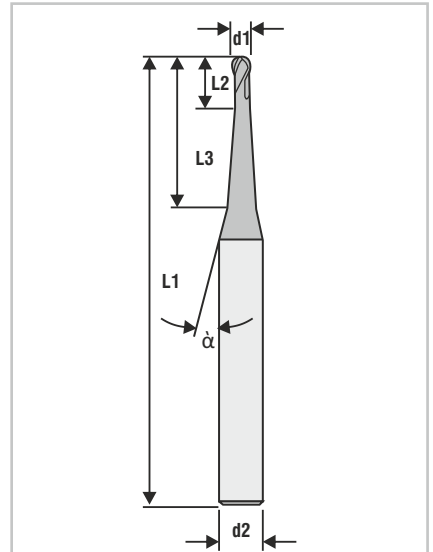
LTN
SERIES

AT
COATING



30°

SMG
0.4mm



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03

BALL
End Mills

**X
60
Series**

X Cornstar (≤ 60 HRC)
Corner Radius End Mills - Regular Series

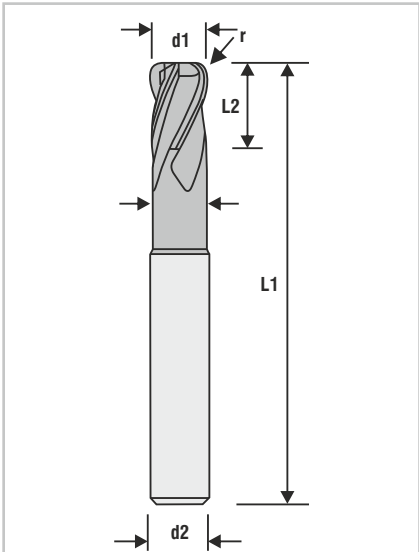


Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□

**AT
COATING**

35°

**SMG
0.4mm**



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03

Article No.		Dimension (mm)						AT-coated
4 Flute	2 Flute	$\varnothing d1$ h10	$\varnothing d2$ h6	r	L2	L1		
X-CS-SEM 4010-r02	X-CS-SEM 2010-r02	1	4	0.2	2	50	■	
X-CS-SEM 4020-r02	X-CS-SEM 2020-r02	2	4	0.2	4	50	■	
X-CS-SEM 4020-r05	X-CS-SEM 2020-r05	2	4	0.5	4	50	■	
X-CS-SEM 4030-r02	X-CS-SEM 2030-r02	3	4	0.2	6	50	■	
X-CS-SEM 4030-r05	X-CS-SEM 2030-r05	3	4	0.5	6	50	■	
X-CS-SEM 4030-r10	X-CS-SEM 2030-r10	3	4	1.0	6	50	■	
X-CS-SEM 4040-r02	X-CS-SEM 2040-r02	4	4	0.2	8	50	■	
X-CS-SEM 4040-r05	X-CS-SEM 2040-r05	4	4	0.5	8	50	■	
X-CS-SEM 4040-r10	X-CS-SEM 2040-r10	4	4	1.0	8	50	■	
X-CS-SEM 2050-r05	X-CS-SEM 2050-r05	5	6	0.5	10	50	■	
X-CS-SEM 4050-r10	X-CS-SEM 2050-r10	5	6	1.0	10	50	■	
X-CS-SEM 4060-r02	X-CS-SEM 2060-r02	6	6	0.2	12	50	■	
X-CS-SEM 4060-r05	X-CS-SEM 2060-r05	6	6	0.5	12	50	■	
X-CS-SEM 4060-r10	X-CS-SEM 2060-r10	6	6	1.0	12	50	■	
X-CS-SEM 4060-r1.5	X-CS-SEM 2060-r1.5	6	6	1.5	12	50	■	
X-CS-SEM 4060-r20	X-CS-SEM 2060-r20	6	6	2	12	50	■	
X-CS-SEM 4080-r05	X-CS-SEM 2080-r05	8	8	0.5	16	60	■	
X-CS-SEM 4080-r10	X-CS-SEM 2080-r10	8	8	1.0	16	60	■	
X-CS-SEM 4080-r15	X-CS-SEM 2080-r15	8	8	1.5	16	60	■	
X-CS-SEM 4080-r20	X-CS-SEM 2080-r20	8	8	2	16	60	■	
X-CS-SEM 4100-r05	X-CS-SEM 2100-r05	10	10	0.5	20	75	■	
X-CS-SEM 4100-r10	X-CS-SEM 2100-r10	10	10	1	20	75	■	
X-CS-SEM 4100-r15	X-CS-SEM 2100-r15	10	10	1.5	20	75	■	
X-CS-SEM 4100-r20	X-CS-SEM 2100-r20	10	10	2.0	20	75	■	
X-CS-SEM 4100-r25	X-CS-SEM 2100-r25	10	10	2.5	20	75	■	
X-CS-SEM 4100-r30	X-CS-SEM 2100-r30	10	10	3.0	20	75	■	
X-CS-SEM 4120-r05	X-CS-SEM 2120-r05	12	12	0.5	24	75	■	
X-CS-SEM 4120-r10	X-CS-SEM 2120-r10	12	12	1.0	24	75	■	
X-CS-SEM 4120-r15	X-CS-SEM 2120-r15	12	12	1.5	24	75	■	
X-CS-SEM 4120-r20	X-CS-SEM 2120-r20	12	12	2.0	24	75	■	
X-CS-SEM 4120-r25	X-CS-SEM 2120-r25	12	12	2.5	24	75	■	
X-CS-SEM 4120-r30	X-CS-SEM 2120-r30	12	12	3.0	24	75	■	
X-CS-SEM 4160-r05	X-CS-SEM 2160-r05	16	16	0.5	32	100	■	
X-CS-SEM 4160-r10	X-CS-SEM 2160-r10	16	16	1	32	100	■	
X-CS-SEM 4160-r15	X-CS-SEM 2160-r15	16	16	1.5	32	100	■	
X-CS-SEM 4160-r20	X-CS-SEM 2160-r20	16	16	2	32	100	■	
X-CS-SEM 4160-r25	X-CS-SEM 2160-r25	16	16	2.5	32	100	■	
X-CS-SEM 4160-r30	X-CS-SEM 2160-r30	16	16	3	32	100	■	

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade

X Cornstar (≤ 60 HRC) LS

Corner Radius End Mills - Long Shank Series

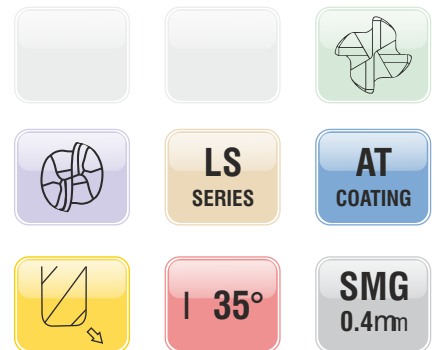
Article No.		Dimension (mm)						
4 Flute	2 Flute	\varnothing d1 h10	\varnothing d2 h6	r	L2	L1	AT-coated	
X-CS-SEM 4030-r02 LS	X-CS-SEM 2030-r02 LS	3	4	0.2	6	75	■	
X-CS-SEM 4030-r05 LS	X-CS-SEM 2030-r05 LS	3	4	0.5	6	75	■	
X-CS-SEM 4030-r10 LS	X-CS-SEM 2030-r10 LS	3	4	1.0	6	75	■	
X-CS-SEM 4040-r02 LS	X-CS-SEM 2040-r02 LS	4	4	0.2	8	75	■	
X-CS-SEM 4040-r05 LS	X-CS-SEM 2040-r05 LS	4	4	0.5	8	75	■	
X-CS-SEM 4040-r10 LS	X-CS-SEM 2040-r10 LS	4	4	1.0	8	75	■	
X-CS-SEM 4050-r05 LS	X-CS-SEM 2050-r05 LS	5	6	0.5	10	75	■	
X-CS-SEM 4050-r10 LS	X-CS-SEM 2050-r10 LS	5	6	1.0	10	75	■	
X-CS-SEM 4060-r02 LS	X-CS-SEM 2060-r02 LS	6	6	0.2	12	75	■	
X-CS-SEM 4060-r05 LS	X-CS-SEM 2060-r05 LS	6	6	0.5	12	75	■	
X-CS-SEM 4060-r10 LS	X-CS-SEM 2060-r10 LS	6	6	1.0	12	100	■	
X-CS-SEM 4060-r1.5 LS	X-CS-SEM 2060-r1.5 LS	6	6	1.5	12	100	■	
X-CS-SEM 4060-r20 LS	X-CS-SEM 2060-r20 LS	6	6	2	12	100	■	
X-CS-SEM 4080-r05 LS	X-CS-SEM 2080-r05 LS	8	8	0.5	16	75	■	
X-CS-SEM 4080-r10 LS	X-CS-SEM 2080-r10 LS	8	8	1.0	16	75	■	
X-CS-SEM 4080-r15 LS	X-CS-SEM 2080-r15 LS	8	8	1.5	16	100	■	
X-CS-SEM 4080-r20 LS	X-CS-SEM 2080-r20 LS	8	8	2	16	100	■	
X-CS-SEM 4100-r05 LS	X-CS-SEM 2100-r05 LS	10	10	0.5	20	100	■	
X-CS-SEM 4100-r10 LS	X-CS-SEM 2100-r10 LS	10	10	1	20	100	■	
X-CS-SEM 4100-r15 LS	X-CS-SEM 2100-r15 LS	10	10	1.5	20	100	■	
X-CS-SEM 4100-r20 LS	X-CS-SEM 2100-r20 LS	10	10	2.0	20	100	■	
X-CS-SEM 4100-r30 LS	X-CS-SEM 2100-r30 LS	10	10	3.0	20	100	■	
X-CS-SEM 4120-r05 LS	X-CS-SEM 2120-r05 LS	12	12	0.5	24	100	■	
X-CS-SEM 4120-r10 LS	X-CS-SEM 2120-r10 LS	12	12	1.0	24	100	■	
X-CS-SEM 4120-r15 LS	X-CS-SEM 2120-r15 LS	12	12	1.5	24	100	■	
X-CS-SEM 4120-r20 LS	X-CS-SEM 2120-r20LS	12	12	2.0	24	100	■	
X-CS-SEM 4120-r30 LS	X-CS-SEM 2120-r30 LS	12	12	3.0	24	100	■	

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LS - Long Shank for deep reach moulds and dies

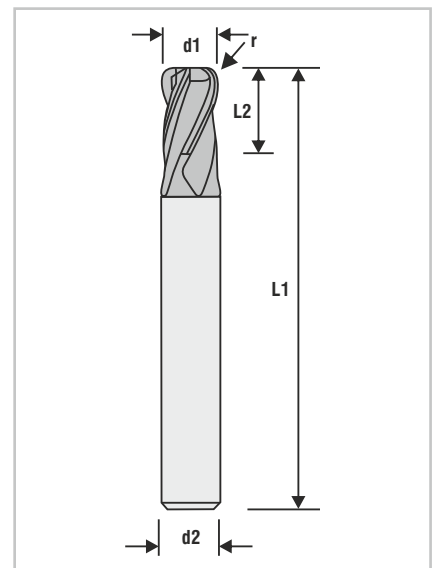


X
60
Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	■
N	Copper	□
S	Titanium	□
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	□



CORNER
End Mills



Tolerance	
Diameter	Range
$1 \leq d < 8$	0 / -0.02
$8 \leq d < 18$	0 / -0.03

XCL Star 4 (≤60 HRC) LN
Corner Radius End Mills - Long Neck Series



Article No.	Dimension (mm)							AT-coated
	4 Flute	∅ d1	∅ d2 h10	L2	L3 h6	r	L1	
XCL4-SEM 4010 LN4	1	4	1	4	0.1	50	■	
XCL4-SEM 4010 LN6	1	4	1	6	0.1	50	■	
XCL4-SEM4 010 LN8	1	4	1	8	0.1	50	■	
XCL4-SEM 4010 LN10	1	4	1	10	0.1	50	■	
XCL4-SEM4 015 LN4	1.5	4	1.5	4	0.2	50	■	
XCL4-SEM 4015 LN6	1.5	4	1.5	6	0.2	50	■	
XCL4-SEM 4015 LN8	1.5	4	1.5	8	0.2	50	■	
XCL4-SEM 4015 LN10	1.5	4	1.5	10	0.2	50	■	
XCL4-SEM 4015 LN12	1.5	4	1.5	12	0.2	50	■	
XCL4-SEM 4020 LN8	2.0	4	2.0	8	0.2	50	■	
XCL4-SEM 4020 LN10	2.0	4	2.0	10	0.2	50	■	
XCL4-SEM 4020 LN12	2.0	4	2.0	12	0.2	50	■	
XCL4-SEM 4020 LN16	2.0	4	2.0	16	0.2	50	■	
XCL6-SEM 4030 LN8	3.0	6	3.0	8	0.2	50	■	
XCL6-SEM 4030 LN10	3.0	6	3.0	10	0.2	50	■	
XCL6-SEM 4030 LN12	3.0	6	3.0	12	0.2	50	■	
XCL6-SEM 4030 LN16	3.0	6	3.0	16	0.2	50	■	
XCL6-SEM 4030 LN20	3.0	6	3.0	20	0.2	50	■	

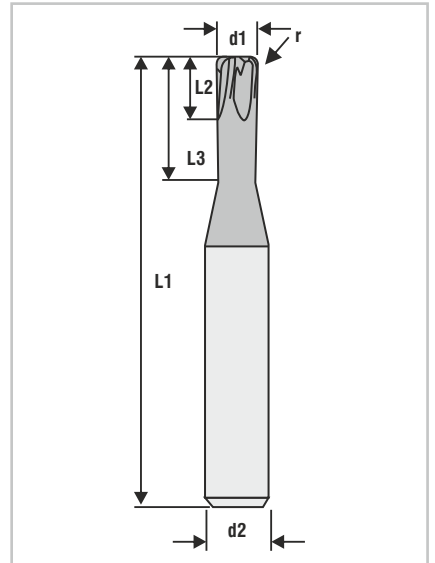
Steel	R _m < 850	■
	R _m 850-1300	■
	R _m 1300-1500	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

LN
SERIES

AT
COATING

35°

SMG
0.4mm



Tolerance

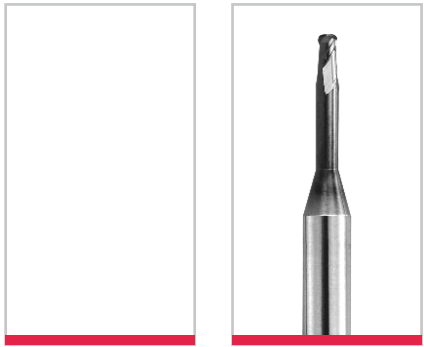
Diameter	Range
1 ≤ d < 8	0 / -0.02

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies

XCL Star 2 (≤ 60 HRC) LN
 Corner Radius End Mills - Long Neck Series

Article No.	Dimension (mm)						
	2 Flute	\varnothing d1	\varnothing d2 h10	L2	L3 h6	r	L1
XCL4-SEM 2010 LN4	1	4	1	4	0.1	50	■
XCL4-SEM 2010 LN6	1	4	1	6	0.1	50	■
XCL4-SEM 2010 LN8	1	4	1	8	0.1	50	■
XCL4-SEM 2010 LN10	1	4	1	10	0.1	50	■
XCL4-SEM 2015 LN4	1.5	4	1.5	4	0.2	50	■
XCL4-SEM 2015 LN6	1.5	4	1.5	6	0.2	50	■
XCL4-SEM 2015 LN8	1.5	4	1.5	8	0.2	50	■
XCL4-SEM 2015 LN10	1.5	4	1.5	10	0.2	50	■
XCL4-SEM 2015 LN12	1.5	4	1.5	12	0.2	50	■
XCL4-SEM 2020 LN8	2.0	4	2.0	8	0.2	50	■
XCL4-SEM 2020 LN10	2.0	4	2.0	10	0.2	50	■
XCL4-SEM 2020 LN12	2.0	4	2.0	12	0.2	50	■
XCL4-SEM 2020 LN16	2.0	4	2.0	16	0.2	50	■
XCL6-SEM 2030 LN8	3.0	6	3.0	8	0.2	50	■
XCL6-SEM 2030 LN10	3.0	6	3.0	10	0.2	50	■
XCL6-SEM 2030 LN12	3.0	6	3.0	12	0.2	50	■
XCL6-SEM 2030 LN16	3.0	6	3.0	16	0.2	50	■
XCL6-SEM 2030 LN20	3.0	6	3.0	20	0.2	50	■

■ Available ex stock / subject to prior sale
SMG - Super-Fine Micron Grade
LN - Long Neck for deep reach moulds and dies



X
60
 Series

Steel	$R_m < 850$	■
	$R_m 850-1300$	■
	$R_m 1300-1500$	■
M	Stainless Steel	■
K	Cast Iron	□
N	Copper	□
S	Titanium	■
Hardened Steel	HRC 48-55	■
	HRC 56-60	□
	HRC > 60	

LN
SERIES

AT
COATING

35°

SMG
0.4mm

CORNER
 End Mills

