

# Zamus Star End Mill

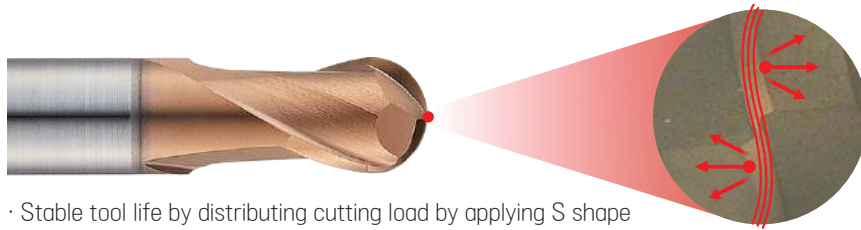
High Hardness HRc 50~70

## Characteristics

- Suitable for high-speed processing of high-hardness workpieces (recommended: HRc 50 ~ 70) such as heat treated steel, alloy steel, and carbon steel
- Suitable for various type of machining with diverse specifications such as long neck, rib, and tapered neck

## Features

- Enhanced cutting-edge wear resistance through ultra-fine grain carbide
- Maintains hardness of the blade and has high temperature oxidation resistance and during high-speed processing by applying AlTiN coating
- Stable performance with designed cutting edge suitable for high-speed machining of high-hardness workpieces



- Stable tool life by distributing cutting load by applying S shape
- Improved machining precision with 0.005mm radius Tolerance

## Case Study

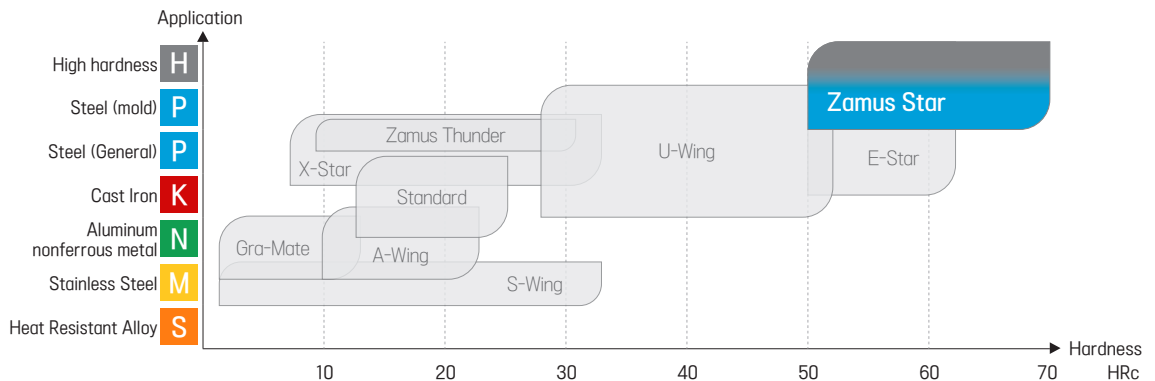
Geometry	Zamus Star	Competitor
Ball		

- Test tool : DB702120
- Material : SKD11 Heat treatment / RPM : 5,950 / FEED : 1,870 / ap : 0.25 / ae : 0.6

Geometry	Zamus Star	Competitor
Corner Radius		

- Test tool : ZS2041001032
- Material : SKD11 Heat treatment / RPM : 5,500 / FEED : 1,100 / ap : 10 / ae : 0.5








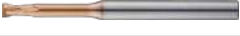





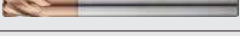
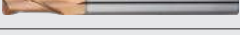
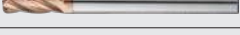
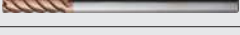
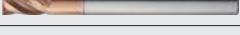

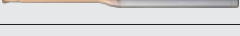


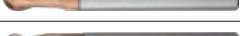
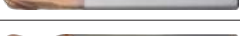

## Applications







# Zamus Star End Mill

High Hardness HRc 50~70

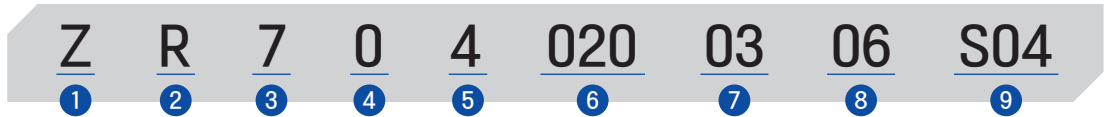
## Contents

Section		EDP No	Geometry	Product	Diameter(DC)		Page
Shape	Flute				Min	Max	
Square	2F	ZE702		2 Flutes Neck Square End Mill	0.1	20	28
	4F	ZE704		4 Flutes Neck Square End Mill	1	20	29
	2F	ZE712		2 Flutes Square End Mill	1	12	30
	4F	ZE714		4 Flutes Square End Mill	1	12	31
	6F	ZE716		6 Flutes Square End Mill	6	20	32
	4F&6F	ZE724(6)		4&6 Flutes Neck Square End Mill	1	12	33
	4F	ZS124		4 Flutes Square End Mill	2	12	34
	2F	ZSLNS20		2 Flutes Long Neck Square End Mill	0.1	5	35
	4F	ZSLNS40		4 Flutes Long Neck Square End Mill	1	5	40
Radius	2F	ZR702		2 Flutes Neck Radius End Mill	1	12	43
	4F	ZR704		4 Flutes Neck Radius End Mill	1	12	49
	6F	ZR706		6 Flutes Neck Radius End Mill	6	12	53
	4F	ZR714		4 Flutes Radius End Mill	3	12	54
	4F	ZR724		4 Flutes Neck Radius End Mill	6	12	55
	2F	ZR732		2 Flutes Long Shank Radius End Mill	1	12	56
	4F	ZR734		4 Flutes Long Shank Radius End Mill	1	12	58
	6F	ZR736		6 Flutes Radius End Mill	6	12	60
	4F	ZS1(2)04		4 Flutes Neck Radius End Mill	1	12	61
	4F	ZS204		4 Flutes Neck Radius End Mill	2	12	62
	2F	ZSLNR20		2 Flutes Long Neck Radius End Mill	0.2	3	64
	2F	ZSTNR20		2 Flutes Tapered Neck Radius End Mill	0.2	3	68
	4F	ZSPM4		4 Flutes Neck Radius End Mill For High Speed Machining	3	12	71
	Ball	2F	DB702		2 Flutes Neck Ball End Mill	0.1	12
3F		DB703		3 Flutes Neck Ball End Mill	2.5	12	73
2F		DB712		2 Flutes Ball End Mill	1	12	74

Section		EDP No	Geometry	Product	Diameter(DC)		Page
Shape	Flute				Min	Max	
Ball	4F	DB734		4Flutes 15° Helix Ball End Mill	2	10	75
	2F	ZSLNB20		2 Flutes Long Neck Ball End Mill	0.1	5	76
	2F	ZSTNB20		2 Flutes Tapered Neck Ball End Mill	0.2	10	81
	3F	ZSTNB30		3 Flutes Tapered Neck Ball End Mill	2	5	86

## EDP No System

\*If expressed as an integer, the decimal point is omitted.



①	②	③	④	⑤	⑥	⑦	⑧	⑨
Section	Appearance	Grade	Length, Shank Type	Flutes	Cutting Dia	Corner R	Effective Length	Shank Dia
Z : Zamus	E : Square	7 : Grade	0 : Neck	2 : 2Flutes	0.05	0.05	For more information, Refer to the detail pages.	4
D : Dynamic	R : Radius		1 : Straight, Neck	3 : 3Flutes	~	~		~
ZS : Zamus Star	B : Ball	2 : Long Neck	4 : 4Flutes	20	3	20		
	LNS : Long Neck Square	3 : Long Shank	5 : 5Flutes					
	LNR : Long Neck Radius							
	LNB : Long Neck Ball							
	PM : Power Mill							

EX) 4 Flutes / Cutting Dia  $\varnothing$ 2 / Corner R 0.3 / Effective Length 6mm / Shank Dia 4 / 70 Grade / Corner Radius Neck Type Zamus End Mill

# ZE702 2 Flutes Neck Square End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

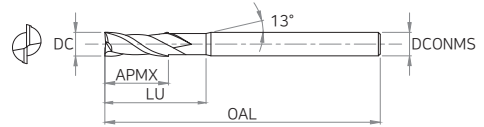
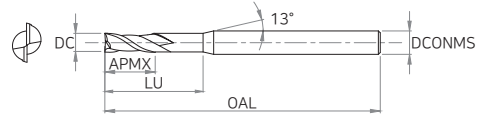
S-Wing

A-Wing

Standard

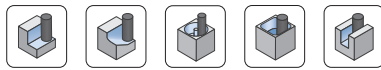
Copper-Mate

Gra-Mate



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø20	0 ~ -0.015	



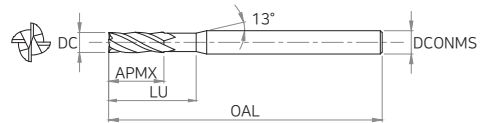
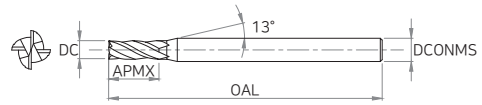
EDP No	DC	APMX	LU	OAL	DCON MS	EDP No	DC	APMX	LU	OAL	DCON MS
ZE702 001	0.1	0.2	-	40	4	ZE702 020	2	3	6	40	6
ZE702 002	0.2	0.4	-	40	4	ZE702 025	2.5	4	6	40	6
ZE702 003	0.3	0.5	-	40	4	ZE702 030	3	4	7	45	6
ZE702 004	0.4	0.7	-	40	4	ZE702 035	3.5	6	9	45	6
ZE702 005	0.5	1	-	40	4	ZE702 040	4	6	9	45	6
ZE702 006	0.6	1.2	-	40	4	ZE702 045	4.5	6	10	45	6
ZE702 007	0.7	1.4	-	40	4	ZE702 050	5	6	11	50	6
ZE702 008	0.8	1.6	-	40	4	ZE702 060	6	7	14	50	6
ZE702 009	0.9	2	-	40	4	ZE702 080	8	9	18	60	8
ZE702 010 S4	1	1.5	-	40	4	ZE702 100	10	12	25	75	10
ZE702 010	1	1.5	-	40	6	ZE702 120	12	15	30	75	12
ZE702 015	1.5	2.2	-	40	6	ZE702 160	16	18	38	90	16
ZE702 020 S4	2	3	6	40	4	ZE702 200	20	24	45	100	20

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

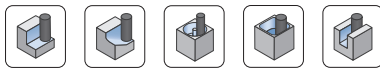
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRC30-50	~FCD500					
◎	◎		○	○						

# ZE704 4 Flutes Neck Square End Mill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø20	0 ~ -0.015	h5



EDP No	DC	APMX	LU	OAL	DCONMS
ZE704 010 S4	1	1.5	-	40	4
ZE704 010	1	1.5	-	40	6
ZE704 015	1.5	2.2	-	40	6
ZE704 020 S4	2	3	6	40	4
ZE704 020	2	3	6	40	6
ZE704 025	2.5	4	6	40	6
ZE704 030	3	4	7	45	6
ZE704 035	3.5	5	9	45	6
ZE704 040	4	5	9	45	6
ZE704 045	4.5	6	10	45	6
ZE704 050	5	6	11	50	6
ZE704 060	6	7	14	50	6
ZE704 080	8	9	18	60	8
ZE704 100	10	12	25	75	10
ZE704 120	12	15	30	75	12
ZE704 160	16	18	38	90	16
ZE704 200	20	24	45	100	20

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

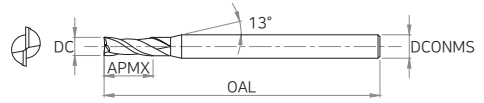
Standard

Copper-Mate

Gr-Mate

# ZE712 2 Flutes Square End Mill

Endmill

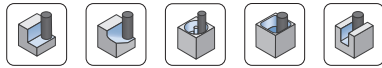


Zamus Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5

E-Star



U-Wing

Zamus Thunder

EDP No	DC	APMX	OAL	DCON MS	EDP No	DC	APMX	OAL	DCON MS
ZE712 010-02	1	2	40	6	ZE712 040	4	10	45	6
ZE712 010	1	3	40	6	ZE712 040-12	4	12	50	6
ZE712 010-04	1	4	40	6	ZE712 040-16	4	16	60	6
ZE712 012	1.2	3	40	6	ZE712 045	4.5	11	45	6
ZE712 015	1.5	4	40	6	ZE712 050	5	13	50	6
ZE712 015-06	1.5	6	40	6	ZE712 055	5.5	13	50	6
ZE712 015-08	1.5	8	40	6	ZE712 060	6	13	50	6
ZE712 020	2	5	40	6	ZE712 060-15	6	15	60	6
ZE712 020-08	2	8	40	6	ZE712 065	6.5	16	60	8
ZE712 020-10	2	10	50	6	ZE712 070	7	18	60	8
ZE712 025	2.5	6	40	6	ZE712 080	8	19	60	8
ZE712 030	3	8	45	6	ZE712 100	10	22	70	10
ZE712 030-10	3	10	50	6	ZE712 120	12	26	75	12
ZE712 030-12	3	12	50	6	ZE712 120-30	12	30	75	12
ZE712 035	3.5	10	45	6					

X-Star

S-Wing

A-Wing

Standard

Copper -Mate

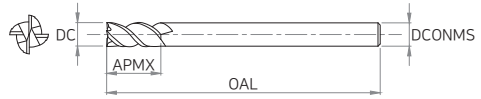
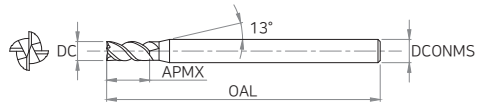
Gra -Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

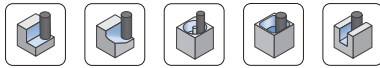
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30-50	~FCD500					
◎	◎		○	○						

# ZE714 4 Flutes Square End Mill



## ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



EDP No	DC	APMX	OAL	DCONMS
ZE714 010	1	2.5	40	6
ZE714 012	1.2	3	40	6
ZE714 015	1.5	4	40	6
ZE714 020	2	5	40	6
ZE714 025	2.5	6	40	6
ZE714 030	3	8	45	6
ZE714 035	3.5	9	45	6
ZE714 040	4	10	45	6
ZE714 050	5	13	50	6
ZE714 060	6	13	50	6
ZE714 060-15	6	15	60	6
ZE714 080	8	19	60	8
ZE714 100	10	22	70	10
ZE714 100-25	10	25	70	10
ZE714 120	12	26	75	12
ZE714 120-30	12	30	80	12

## ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZE716 6 Flutes Square End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

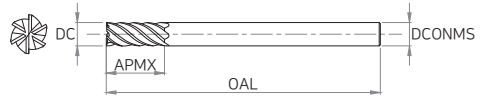
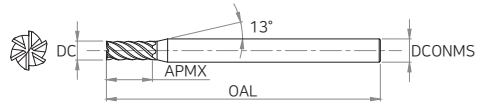
S-Wing

A-Wing

Standard

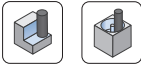
Copper-Mate

Gra-Mate



► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



CARBIDE
AITIN
6
50° HELIX
DATA P.608

EDP No	DC	APMX	OAL	DCONMS
ZE716 060	6	13	50	6
ZE716 080	8	18	60	8
ZE716 100	10	22	70	10
ZE716 120	12	16	75	12
ZE716 160	16	35	90	16
ZE716 200	20	44	100	20

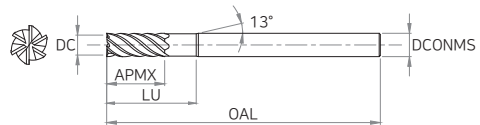
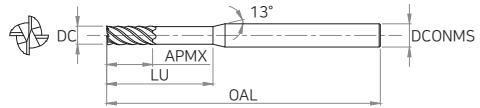
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	HB225 ~325	Steel HRC30~50	~FCD500					
◎	◎		○	○						

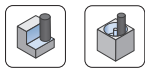
# ZE724(6)

## 4&6 Flutes Neck Square End Mill



### ► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	h5



EDP No	DC	APMX	LU	OAL	DCONMS	NOF
ZE724 010	1	1.5	5	45	6	4
ZE724 015	1.5	2.2	6	45	6	4
ZE724 020	2	3	8	45	6	4
ZE724 030	3	4	9	50	6	4
ZE724 040	4	5	12	50	6	4
ZE724 050	5	6	15	50	6	4
ZE726 060	6	7	20	60	6	6
ZE726 080	8	9	25	70	8	6
ZE726 100	10	12	32	75	10	6
ZE726 120	12	15	38	80	12	6

### ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

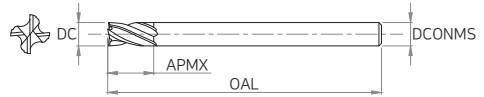
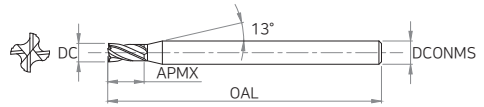
Standard

Copper-Mate

Gra-Mate

# ZS124 4 Flutes Square End Mill

Endmill



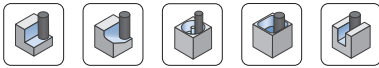
Zamus Star

E-Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5

U-Wing



Zamus Thunder

EDP No	DC	APMX	OAL	DCONMS
ZS124 020	2	5	45	4
ZS124 030	3	8	45	6
ZS124 040	4	10	45	6
ZS124 060	6	16	50	6
ZS124 080	8	20	60	8
ZS124 100	10	25	75	10
ZS124 120	12	35	85	12

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

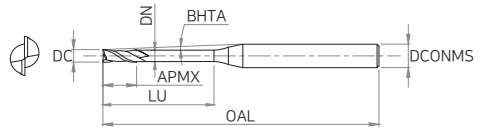
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	HB225 ~325	Steel HRC30~50	~FCD500					
◎	◎		○	○						

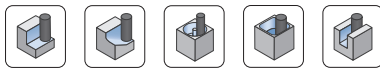
# ZSLNS20 2 Flutes Long Neck Square End Mill

Endmill



► Tolerance

DC		Shank Dia
∅0.1 ~ ∅0.5	0 ~ -0.012	h5
∅0.6 ~ ∅5	0 ~ -0.015	



EDP No	DC	APMX	LU	DN	OAL	DCONMS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS20 01-0.3	0.1	0.15	0.3	0.08	45	4	11.6	0.4	0.4	0.5	0.5	0.5
ZSLNS20 01-0.5	0.1	0.15	0.5	0.08	45	4	11.4	0.6	0.7	0.7	0.7	0.8
ZSLNS20 01-1	0.1	0.15	1	0.08	45	4	10.9	1.2	1.2	1.2	1.3	1.4
ZSLNS20 02-0.5	0.2	0.3	0.5	0.17	50	4	11.3	1.2	1.3	1.5	1.7	2
ZSLNS20 02-1	0.2	0.3	1	0.17	50	4	10.8	1.7	1.9	2.2	2.4	2.7
ZSLNS20 02-1.5	0.2	0.3	1.5	0.17	50	4	10.3	2.3	2.5	2.8	3	3.4
ZSLNS20 03-1	0.3	0.45	1	0.27	50	4	10.8	1.7	1.9	2.2	2.4	2.7
ZSLNS20 03-1.5	0.3	0.45	1.5	0.27	50	4	10.3	2.3	2.5	2.8	3	3.4
ZSLNS20 03-2	0.3	0.45	2	0.27	50	4	9.8	2.8	3.1	3.4	3.6	4.1
ZSLNS20 03-2.5	0.3	0.45	2.5	0.27	50	4	9.4	3.4	3.7	4	4.3	4.7
ZSLNS20 03-3	0.3	0.45	3	0.27	50	4	9	3.9	4.3	4.6	4.9	5.4
ZSLNS20 04-1	0.4	0.6	1	0.37	50	4	10.7	1.7	1.9	2.2	2.4	2.7
ZSLNS20 04-1.5	0.4	0.6	1.5	0.37	50	4	10.2	2.3	2.5	2.8	3	3.4
ZSLNS20 04-2	0.4	0.6	2	0.37	50	4	9.7	2.8	3.1	3.4	3.6	4.1
ZSLNS20 04-2.5	0.4	0.6	2.5	0.37	50	4	9.3	3.4	3.7	4	4.3	4.7
ZSLNS20 04-3	0.4	0.6	3	0.37	50	4	8.9	3.9	4.3	4.6	4.9	5.4
ZSLNS20 04-3.5	0.4	0.6	3.5	0.37	50	4	8.6	4.5	4.9	5.2	5.5	6
ZSLNS20 04-4	0.4	0.6	4	0.37	50	4	8.2	5	5.4	5.8	6.1	6.6
ZSLNS20 04-5	0.4	0.6	5	0.37	50	4	7.6	6.1	6.6	6.9	7.3	7.8
ZSLNS20 04-6	0.4	0.6	6	0.37	50	4	7.1	7.2	7.7	8.1	8.4	9

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZSLNS20

## 2 Flutes Long Neck Square End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

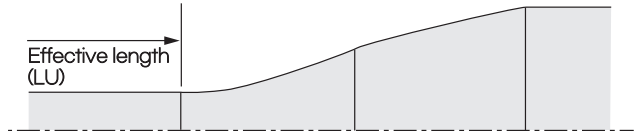
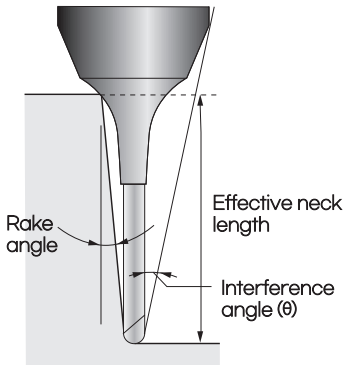
S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS20 05-1	0.5	0.75	1	0.47	50	4	10.7	1.7	1.9	2.2	2.4	2.7
ZSLNS20 05-1.5	0.5	0.75	1.5	0.47	50	4	10.2	2.3	2.5	2.8	3	3.4
ZSLNS20 05-2	0.5	0.75	2	0.47	50	4	9.7	2.8	3.1	3.4	3.6	4.1
ZSLNS20 05-2.5	0.5	0.75	2.5	0.47	50	4	9.3	3.4	3.7	4	4.3	4.7
ZSLNS20 05-3	0.5	0.75	3	0.47	50	4	8.9	3.9	4.3	4.6	4.9	5.4
ZSLNS20 05-4	0.5	0.75	4	0.47	50	4	8.1	5	5.4	5.8	6.1	6.6
ZSLNS20 05-5	0.5	0.75	5	0.47	50	4	7.5	6.1	6.6	6.9	7.3	7.8
ZSLNS20 05-6	0.5	0.75	6	0.47	50	4	7	7.2	7.7	8.1	8.4	9
ZSLNS20 05-8	0.5	0.75	8	0.47	50	4	6.2	9.3	9.9	10.3	10.7	11.4
ZSLNS20 06-2	0.6	0.9	2	0.57	50	4	9.6	2.8	3.1	3.4	3.6	4.1
ZSLNS20 06-4	0.6	0.9	4	0.57	50	4	8.1	5	5.4	5.8	6.1	6.6
ZSLNS20 06-6	0.6	0.9	6	0.57	50	4	6.9	7.2	7.7	8.1	8.4	9
ZSLNS20 06-8	0.6	0.9	8	0.57	50	4	6.1	9.3	9.9	10.3	10.7	11.4
ZSLNS20 06-10	0.6	0.9	10	0.57	50	4	5.4	11.5	12.1	12.6	13	13.7
ZSLNS20 07-2	0.7	1.05	2	0.67	50	4	9.6	2.8	3.1	3.4	3.6	4.1
ZSLNS20 07-4	0.7	1.05	4	0.67	50	4	8	5	5.4	5.8	6.1	6.6
ZSLNS20 07-6	0.7	1.05	6	0.67	50	4	6.9	7.2	7.7	8.1	8.4	9
ZSLNS20 07-8	0.7	1.05	8	0.67	50	4	6	9.3	9.9	10.3	10.7	11.4
ZSLNS20 07-10	0.7	1.05	10	0.67	50	4	5.3	11.5	12.1	12.6	13	13.7
ZSLNS20 08-4	0.8	1.2	4	0.77	50	4	7.9	5	5.4	5.8	6.1	6.6

### ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Steel ~HB225	HB225 ~325	Steel HRc30-50	~FCD500					
◎	◎		○	○						

# ZSLNS20 2 Flutes Long Neck Square End Mill

Endmill

EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS20 08-6	0.8	1.2	6	0.77	50	4	6.8	7.2	7.7	8.1	8.4	9
ZSLNS20 08-8	0.8	1.2	8	0.77	50	4	5.9	9.3	9.9	10.3	10.7	11.4
ZSLNS20 08-10	0.8	1.2	10	0.77	50	4	5.2	11.5	12.1	12.6	13	13.7
ZSLNS20 08-12	0.8	1.2	12	0.77	55	4	4.7	13.6	14.2	14.8	15.2	16
ZSLNS20 09-6	0.9	1.35	6	0.86	50	4	6.7	7.2	7.7	8.1	8.4	9.1
ZSLNS20 09-8	0.9	1.35	8	0.86	50	4	5.8	9.4	9.9	10.4	10.7	11.4
ZSLNS20 09-10	0.9	1.35	10	0.86	50	4	5.1	11.5	12.1	12.6	13	13.7
ZSLNS20 09-12	0.9	1.35	12	0.86	55	4	4.6	13.6	14.3	14.8	15.2	16
ZSLNS20 10-2	1	1.5	2	0.96	50	4	9.4	2.9	3.2	3.4	3.7	4.1
ZSLNS20 10-4	1	1.5	4	0.96	50	4	7.7	5.1	5.5	5.8	6.1	6.6
ZSLNS20 10-6	1	1.5	6	0.96	50	4	6.6	7.2	7.7	8.1	8.4	9.1
ZSLNS20 10-8	1	1.5	8	0.96	50	4	5.7	9.4	9.9	10.4	10.7	11.4
ZSLNS20 10-10	1	1.5	10	0.96	50	4	5	11.5	12.1	12.6	13	13.7
ZSLNS20 10-12	1	1.5	12	0.96	55	4	4.5	13.6	14.3	14.8	15.2	16
ZSLNS20 10-14	1	1.5	14	0.96	55	4	4.1	15.7	16.4	17	17.4	18.7
ZSLNS20 10-16	1	1.5	16	0.96	60	4	3.8	17.8	18.6	19.1	19.6	21.3
ZSLNS20 10-20	1	1.5	20	0.96	60	4	3.2	22	22.8	23.5	24	26.6
ZSLNS20 12-6	1.2	1.8	6	1.15	50	4	6.3	7.3	7.7	8.1	8.5	9.1
ZSLNS20 12-8	1.2	1.8	8	1.15	50	4	5.5	9.4	9.9	10.4	10.8	11.4
ZSLNS20 12-10	1.2	1.8	10	1.15	50	4	4.8	11.5	12.1	12.6	13	13.7
ZSLNS20 12-12	1.2	1.8	12	1.15	55	4	4.3	13.6	14.3	14.8	15.2	16
ZSLNS20 12-16	1.2	1.8	16	1.15	55	4	3.6	17.8	18.6	19.2	19.7	21.3
ZSLNS20 14-6	1.4	2.1	6	1.34	50	4	6.1	7.3	7.8	8.1	8.5	9.1
ZSLNS20 14-8	1.4	2.1	8	1.34	50	4	5.3	9.4	10	10.4	10.8	11.5
ZSLNS20 14-10	1.4	2.1	10	1.34	50	4	4.6	11.6	12.1	12.6	13	13.8
ZSLNS20 14-12	1.4	2.1	12	1.34	55	4	4.1	13.7	14.3	14.8	15.3	16.1
ZSLNS20 14-14	1.4	2.1	14	1.34	55	4	3.7	15.8	16.5	17	17.5	18.7
ZSLNS20 14-16	1.4	2.1	16	1.34	55	4	3.4	17.9	18.6	19.2	19.7	21.4
ZSLNS20 15-4	1.5	2.25	4	1.44	50	4	7.2	5.2	5.5	5.9	6.2	6.7
ZSLNS20 15-6	1.5	2.25	6	1.44	50	4	6	7.3	7.8	8.1	8.5	9.1
ZSLNS20 15-8	1.5	2.25	8	1.44	50	4	5.1	9.4	10	10.4	10.8	11.5
ZSLNS20 15-10	1.5	2.25	10	1.44	50	4	4.5	11.6	12.1	12.6	13	13.8
ZSLNS20 15-12	1.5	2.25	12	1.44	55	4	4	13.7	14.3	14.8	15.3	16.1
ZSLNS20 15-14	1.5	2.25	14	1.44	55	4	3.6	15.8	16.5	17	17.5	18.7

Zamus Star  
E-Star  
U-Wing  
Zamus Thunder  
X-Star  
S-Wing  
A-Wing  
Standard  
Copper-Mate  
Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSLNS20

## 2 Flutes Long Neck Square End Mill

Endmill

	EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
	ZSLNS20 15-16	1.5	2.25	16	1.44	55	4	3.3	17.9	18.6	19.2	19.7	-
	ZSLNS20 15-18	1.5	2.25	18	1.44	60	4	3	20	20.7	21.3	21.9	-
Zamus Star	ZSLNS20 15-20	1.5	2.25	20	1.44	60	4	2.8	22	22.9	23.5	24.1	-
	ZSLNS20 15-25	1.5	2.25	25	1.44	65	4	2.4	27.3	28.1	28.8	30	-
	ZSLNS20 16-6	1.6	2.4	6	1.54	50	4	5.9	7.3	7.8	8.1	8.5	9.1
	ZSLNS20 16-8	1.6	2.4	8	1.54	50	4	5	9.4	10	10.4	10.8	11.5
E-Star	ZSLNS20 16-10	1.6	2.4	10	1.54	50	4	4.4	11.6	12.1	12.6	13	13.8
	ZSLNS20 16-12	1.6	2.4	12	1.54	55	4	3.9	13.7	14.3	14.8	15.3	16.1
	ZSLNS20 16-14	1.6	2.4	14	1.54	55	4	3.5	15.8	16.5	17	17.5	18.7
	ZSLNS20 16-16	1.6	2.4	16	1.54	55	4	3.2	17.9	18.6	19.2	19.7	21.4
U-Wing	ZSLNS20 16-18	1.6	2.4	18	1.54	60	4	2.9	20	20.7	21.3	21.9	-
	ZSLNS20 16-20	1.6	2.4	20	1.54	60	4	2.7	22	22.9	23.5	24.1	-
	ZSLNS20 18-6	1.8	2.7	6	1.73	50	4	5.6	7.4	7.8	8.2	8.5	9.1
Zamus Thunder	ZSLNS20 18-8	1.8	2.7	8	1.73	50	4	4.8	9.5	10	10.4	10.8	11.5
	ZSLNS20 18-10	1.8	2.7	10	1.73	50	4	4.2	11.6	12.2	12.6	13	13.8
	ZSLNS20 18-12	1.8	2.7	12	1.73	55	4	3.7	13.7	14.3	14.8	15.3	16.1
	ZSLNS20 18-14	1.8	2.7	14	1.73	55	4	3.3	15.8	16.5	17	17.5	18.8
X-Star	ZSLNS20 18-16	1.8	2.7	16	1.73	55	4	3	17.9	18.6	19.2	19.7	-
	ZSLNS20 18-18	1.8	2.7	18	1.73	60	4	2.7	20	20.7	21.3	21.9	-
	ZSLNS20 18-20	1.8	2.7	20	1.73	60	4	2.5	22.1	22.9	23.5	24.1	-
S-Wing	ZSLNS20 20-4	2	3	4	1.92	50	4	6.5	5.3	5.6	5.9	6.2	6.7
	ZSLNS20 20-6	2	3	6	1.92	50	4	5.3	7.4	7.8	8.2	8.5	9.1
	ZSLNS20 20-8	2	3	8	1.92	50	4	4.5	9.5	10	10.4	10.8	11.5
A-Wing	ZSLNS20 20-10	2	3	10	1.92	50	4	3.9	11.6	12.2	12.7	13.1	13.8
	ZSLNS20 20-12	2	3	12	1.92	55	4	3.4	13.7	14.3	14.9	15.3	16.1
	ZSLNS20 20-14	2	3	14	1.92	55	4	3.1	15.8	16.5	17	17.5	18.8
	ZSLNS20 20-16	2	3	16	1.92	55	4	2.8	17.9	18.6	19.2	19.7	-
Standard	ZSLNS20 20-18	2	3	18	1.92	60	4	2.6	20	20.8	21.4	21.9	-
	ZSLNS20 20-20	2	3	20	1.92	60	4	2.4	22.1	22.9	23.5	24.1	-
Copper-Mate	ZSLNS20 20-25	2	3	25	1.92	65	4	2	27.3	28.2	28.9	-	-
	ZSLNS20 20-30	2	3	30	1.92	70	4	1.7	32.5	33.4	34.4	-	-
	ZSLNS20 25-8	2.5	3.75	8	2.4	50	4	3.7	9.6	10.1	10.5	10.9	11.5
	ZSLNS20 25-10	2.5	3.75	10	2.4	50	4	3.1	11.7	12.2	12.7	13.1	13.8
Gra-Mate	ZSLNS20 25-12	2.5	3.75	12	2.4	55	4	2.7	13.8	14.4	14.9	15.3	-

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30-50	Cast Iron ~FCD500					
◎	◎		○	○						

# ZSLNS20 2 Flutes Long Neck Square End Mill

Endmill

EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS20 25-14	2.5	3.75	14	2.4	55	4	2.4	15.9	16.5	17.1	17.5	-
ZSLNS20 25-16	2.5	3.75	16	2.4	55	4	2.2	18	18.7	19.2	19.7	-
ZSLNS20 25-18	2.5	3.75	18	2.4	60	4	2	20.1	20.8	21.4	-	-
ZSLNS20 25-20	2.5	3.75	20	2.4	60	4	1.8	22.1	22.9	23.5	-	-
ZSLNS20 25-25	2.5	3.75	25	2.4	65	4	1.5	27.3	28.2	-	-	-
ZSLNS20 25-30	2.5	3.75	30	2.4	70	4	1.3	32.6	33.5	-	-	-
ZSLNS20 30-8	3	4.5	8	2.88	55	6	5.6	9.6	10.1	10.5	10.9	11.5
ZSLNS20 30-10	3	4.5	10	2.88	55	6	5	11.7	12.3	12.7	13.1	13.8
ZSLNS20 30-12	3	4.5	12	2.88	60	6	4.5	13.8	14.4	14.9	15.4	16.3
ZSLNS20 30-14	3	4.5	14	2.88	60	6	4.1	15.9	16.6	17.1	17.6	18.9
ZSLNS20 30-16	3	4.5	16	2.88	60	6	3.7	18	18.7	19.3	19.8	21.6
ZSLNS20 30-18	3	4.5	18	2.88	60	6	3.4	20.1	20.8	21.4	21.9	24.2
ZSLNS20 30-20	3	4.5	20	2.88	65	6	3.2	22.2	23	23.6	24.2	26.9
ZSLNS20 30-25	3	4.5	25	2.88	70	6	2.7	27.4	28.2	28.9	30.2	-
ZSLNS20 30-30	3	4.5	30	2.88	75	6	2.4	32.6	33.5	34.5	36.2	-
ZSLNS20 30-35	3	4.5	35	2.88	80	6	2.1	37.7	38.7	40.2	42.2	-
ZSLNS20 30-40	3	4.5	40	2.88	90	6	1.9	42.9	43.9	45.9	-	-
ZSLNS20 40-12	4	6	12	3.85	60	6	3.4	13.9	14.5	15	15.4	16.3
ZSLNS20 40-16	4	6	16	3.85	60	6	2.8	18.1	18.8	19.3	19.8	-
ZSLNS20 40-20	4	6	20	3.85	70	6	2.3	22.3	23	23.6	24.3	-
ZSLNS20 40-25	4	6	25	3.85	70	6	2	27.4	28.3	28.9	-	-
ZSLNS20 40-30	4	6	30	3.85	80	6	1.7	32.6	33.5	34.6	-	-
ZSLNS20 40-35	4	6	35	3.85	80	6	1.5	37.8	38.8	-	-	-
ZSLNS20 40-40	4	6	40	3.85	90	6	1.3	42.9	44	-	-	-
ZSLNS20 40-45	4	6	45	3.85	90	6	1.2	48.1	49.4	-	-	-
ZSLNS20 40-50	4	6	50	3.85	100	6	1.1	53.2	54.8	-	-	-
ZSLNS20 50-16	5	7.5	16	4.85	60	6	1.5	18.1	18.8	-	-	-
ZSLNS20 50-20	5	7.5	20	4.85	60	6	1.3	22.3	23	-	-	-
ZSLNS20 50-25	5	7.5	25	4.85	70	6	1.1	27.4	28.3	-	-	-
ZSLNS20 50-30	5	7.5	30	4.85	70	6	0.9	32.6	-	-	-	-
ZSLNS20 50-35	5	7.5	35	4.85	80	6	0.8	37.8	-	-	-	-
ZSLNS20 50-40	5	7.5	40	4.85	90	6	0.7	42.9	-	-	-	-
ZSLNS20 50-50	5	7.5	50	4.85	100	6	0.6	53.2	-	-	-	-

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

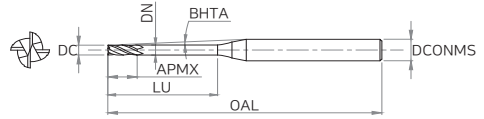
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSLNS40

## 4 Flutes Long Neck Square End Mill

Endmill



Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

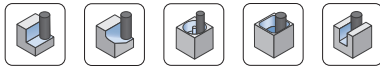
Standard

Copper-Mate

Gra-Mate

### ► Tolerance

DC		Shank Dia
ø1 ~ ø5	0 ~ -0.015	h5



EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS40 10-4	1	1.5	4	0.96	50	4	7.7	5.1	5.5	5.8	6.1	6.6
ZSLNS40 10-6	1	1.5	6	0.96	50	4	6.6	7.2	7.7	8.1	8.4	9.1
ZSLNS40 10-8	1	1.5	8	0.96	50	4	5.7	9.4	9.9	10.4	10.7	11.4
ZSLNS40 10-10	1	1.5	10	0.96	50	4	5	11.5	12.1	12.6	13	13.7
ZSLNS40 15-4	1.5	2.25	4	1.44	50	4	7.2	5.2	5.5	5.9	6.2	6.7
ZSLNS40 15-6	1.5	2.25	6	1.44	50	4	6	7.3	7.8	8.1	8.5	9.1
ZSLNS40 15-8	1.5	2.25	8	1.44	50	4	5.1	9.4	10	10.4	10.8	11.5
ZSLNS40 15-10	1.5	2.25	10	1.44	50	4	4.5	11.6	12.1	12.6	13	13.8
ZSLNS40 15-12	1.5	2.25	12	1.44	55	4	4	13.7	14.3	14.8	15.3	16.1
ZSLNS40 15-14	1.5	2.25	14	1.44	55	4	3.6	15.8	16.5	17	17.5	18.7
ZSLNS40 15-16	1.5	2.25	16	1.44	55	4	3.3	17.9	18.6	19.2	19.7	-
ZSLNS40 15-18	1.5	2.25	18	1.44	60	4	3	20	20.7	21.3	21.9	-
ZSLNS40 15-20	1.5	2.25	20	1.44	60	4	2.8	22	22.9	23.5	24.1	-
ZSLNS40 15-25	1.5	2.25	25	1.44	65	4	2.4	27.3	28.1	28.8	30	-
ZSLNS40 20-4	2	3	4	1.92	50	4	6.5	5.3	5.6	5.9	6.2	6.7
ZSLNS40 20-6	2	3	6	1.92	50	4	5.3	7.4	7.8	8.2	8.5	9.1
ZSLNS40 20-8	2	3	8	1.92	50	4	4.5	9.5	10	10.4	10.8	11.5
ZSLNS40 20-10	2	3	10	1.92	50	4	3.9	11.6	12.2	12.7	13.1	13.8
ZSLNS40 20-12	2	3	12	1.92	55	4	3.4	13.7	14.3	14.9	15.3	16.1
ZSLNS40 20-14	2	3	14	1.92	55	4	3.1	15.8	16.5	17	17.5	18.8

### ► Applicable Working Material

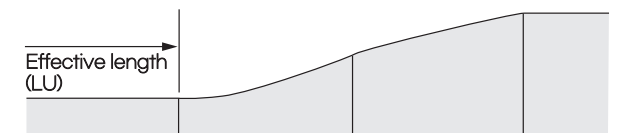
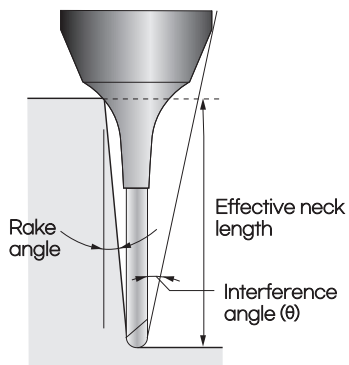
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30-50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

# ZSLNS40

## 4 Flutes Long Neck Square End Mill

Endmill



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS40 20-16	2	3	16	1.92	55	4	2.8	17.9	18.6	19.2	19.7	-
ZSLNS40 20-18	2	3	18	1.92	60	4	2.6	20	20.8	21.4	21.9	-
ZSLNS40 20-20	2	3	20	1.92	60	4	2.4	22.1	22.9	23.5	24.1	-
ZSLNS40 20-25	2	3	25	1.92	65	4	2	27.3	28.2	28.9	-	-
ZSLNS40 20-30	2	3	30	1.92	70	4	1.7	32.5	33.4	34.4	-	-
ZSLNS40 25-8	2.5	3.75	8	2.4	50	4	3.7	9.6	10.1	10.5	10.9	11.5
ZSLNS40 25-10	2.5	3.75	10	2.4	50	4	3.1	11.7	12.2	12.7	13.1	13.8
ZSLNS40 25-12	2.5	3.75	12	2.4	55	4	2.7	13.8	14.4	14.9	15.3	-
ZSLNS40 25-14	2.5	3.75	14	2.4	55	4	2.4	15.9	16.5	17.1	17.5	-
ZSLNS40 25-16	2.5	3.75	16	2.4	55	4	2.2	18	18.7	19.2	19.7	-
ZSLNS40 25-18	2.5	3.75	18	2.4	60	4	2	20.1	20.8	21.4	-	-
ZSLNS40 25-20	2.5	3.75	20	2.4	60	4	1.8	22.1	22.9	23.5	-	-
ZSLNS40 25-25	2.5	3.75	25	2.4	65	4	1.5	27.3	28.2	-	-	-
ZSLNS40 25-30	2.5	3.75	30	2.4	70	4	1.3	32.6	33.5	-	-	-
ZSLNS40 30-8	3	4.5	8	2.88	55	6	5.6	9.6	10.1	10.5	10.9	11.5
ZSLNS40 30-10	3	4.5	10	2.88	55	6	5	11.7	12.3	12.7	13.1	13.8
ZSLNS40 30-12	3	4.5	12	2.88	60	6	4.5	13.8	14.4	14.9	15.4	16.3
ZSLNS40 30-14	3	4.5	14	2.88	60	6	4.1	15.9	16.6	17.1	17.6	18.9
ZSLNS40 30-16	3	4.5	16	2.88	60	6	3.7	18	18.7	19.3	19.8	21.6
ZSLNS40 30-18	3	4.5	18	2.88	60	6	3.4	20.1	20.8	21.4	21.9	24.2

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

Zamus Star  
E-Star  
U-Wing  
Zamus Thunder  
X-Star  
S-Wing  
A-Wing  
Standard  
Copper-Mate  
Gra-Mate

# ZSLNS40

## 4 Flutes Long Neck Square End Mill

Endmill

EDP No	DC	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
								0.5°	1°	1.5°	2°	3°
ZSLNS40 30-20	3	4.5	20	2.88	65	6	3.2	22.2	23	23.6	24.2	26.9
ZSLNS40 30-25	3	4.5	25	2.88	70	6	2.7	27.4	28.2	28.9	30.2	-
ZSLNS40 30-30	3	4.5	30	2.88	75	6	2.4	32.6	33.5	34.5	36.2	-
ZSLNS40 30-35	3	4.5	35	2.88	80	6	2.1	37.7	38.7	40.2	42.2	-
ZSLNS40 30-40	3	4.5	40	2.88	90	6	1.9	42.9	43.9	45.9	-	-
ZSLNS40 40-12	4	6	12	3.85	60	6	3.4	13.9	14.5	15	15.4	16.3
ZSLNS40 40-16	4	6	16	3.85	60	6	2.8	18.1	18.8	19.3	19.8	-
ZSLNS40 40-20	4	6	20	3.85	70	6	2.3	22.3	23	23.6	24.3	-
ZSLNS40 40-25	4	6	25	3.85	70	6	2	27.4	28.3	28.9	-	-
ZSLNS40 40-30	4	6	30	3.85	80	6	1.7	32.6	33.5	34.6	-	-
ZSLNS40 40-35	4	6	35	3.85	80	6	1.5	37.8	38.8	-	-	-
ZSLNS40 40-40	4	6	40	3.85	90	6	1.3	42.9	44	-	-	-
ZSLNS40 40-45	4	6	45	3.85	90	6	1.2	48.1	49.4	-	-	-
ZSLNS40 40-50	4	6	50	3.85	100	6	1.1	53.2	54.8	-	-	-
ZSLNS40 50-16	5	7.5	16	4.85	60	6	1.5	18.1	18.8	-	-	-
ZSLNS40 50-20	5	7.5	20	4.85	60	6	1.3	22.3	23	-	-	-
ZSLNS40 50-25	5	7.5	25	4.85	70	6	1.1	27.4	28.3	-	-	-
ZSLNS40 50-30	5	7.5	30	4.85	60	6	0.9	32.6	-	-	-	-
ZSLNS40 50-35	5	7.5	35	4.85	80	6	0.8	37.8	-	-	-	-
ZSLNS40 50-40	5	7.5	40	4.85	90	6	0.7	42.9	-	-	-	-
ZSLNS40 50-50	5	7.5	50	4.85	100	6	0.6	53.2	-	-	-	-

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper -Mate

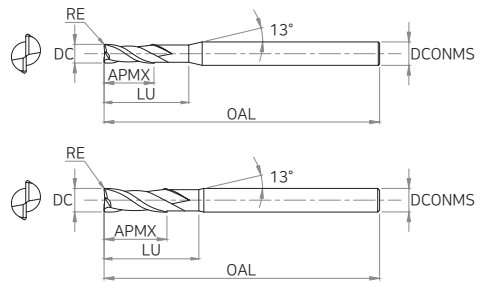
Gra -Mate

### ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

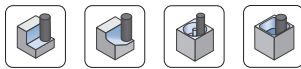
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FC500					
◎	◎		○	○						

# ZR702 2 Flutes Neck Radius End Mill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR702 01000503S4	1	0.05	1.5	3	50	4
ZR702 01000504S4	1	0.05	1.5	4	50	4
ZR702 01000506S4	1	0.05	1.5	6	50	4
ZR702 01000508S4	1	0.05	1.5	8	50	4
ZR702 01000510S4	1	0.05	1.5	10	50	4
ZR702 0100103S4	1	0.1	1.5	3	50	4
ZR702 0100104S4	1	0.1	1.5	4	50	4
ZR702 0100106S4	1	0.1	1.5	6	50	4
ZR702 0100108S4	1	0.1	1.5	8	50	4
ZR702 0100110S4	1	0.1	1.5	10	50	4
ZR702 0100203S4	1	0.2	1.5	3	50	4
ZR702 0100204S4	1	0.2	1.5	4	50	4
ZR702 0100206S4	1	0.2	1.5	6	50	4
ZR702 0100208S4	1	0.2	1.5	8	50	4
ZR702 0100210S4	1	0.2	1.5	10	50	4
ZR702 0100303S4	1	0.3	1.5	3	50	4
ZR702 0100304S4	1	0.3	1.5	4	50	4
ZR702 0100306S4	1	0.3	1.5	6	50	4
ZR702 0100308S4	1	0.3	1.5	8	50	4
ZR702 0100310S4	1	0.3	1.5	10	50	4

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZR702 2 Flutes Neck Radius End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR702 0100104	1	0.1	1.5	4	50	6
ZR702 0100106	1	0.1	1.5	6	50	6
ZR702 0100204	1	0.2	1.5	4	50	6
ZR702 0100206	1	0.2	1.5	6	50	6
ZR702 0100210	1	0.2	1.5	10	50	6
ZR702 0100212	1	0.2	1.5	12	50	6
ZR702 0120208	1.2	0.2	2	8	50	6
ZR702 0120212	1.2	0.2	2	12	50	6
ZR702 01500504S4	1.5	0.05	2.5	4	50	4
ZR702 01500506S4	1.5	0.05	2.5	6	50	4
ZR702 01500508S4	1.5	0.05	2.5	8	50	4
ZR702 01500510S4	1.5	0.05	2.5	10	50	4
ZR702 01500512S4	1.5	0.05	2.5	12	50	4
ZR702 0150104S4	1.5	0.1	2.5	4	50	4
ZR702 0150106S4	1.5	0.1	2.5	6	50	4
ZR702 0150108S4	1.5	0.1	2.5	8	50	4
ZR702 0150110S4	1.5	0.1	2.5	10	50	4
ZR702 0150112S4	1.5	0.1	2.5	12	50	4
ZR702 0150204S4	1.5	0.2	2.5	4	50	4
ZR702 0150206S4	1.5	0.2	2.5	6	50	4
ZR702 0150208S4	1.5	0.2	2.5	8	50	4
ZR702 0150210S4	1.5	0.2	2.5	10	50	4
ZR702 0150212S4	1.5	0.2	2.5	12	50	4
ZR702 0150304S4	1.5	0.3	2.5	4	50	4
ZR702 0150306S4	1.5	0.3	2.5	6	50	4
ZR702 0150308S4	1.5	0.3	2.5	8	50	4
ZR702 0150310S4	1.5	0.3	2.5	10	50	4
ZR702 0150312S4	1.5	0.3	2.5	12	50	4
ZR702 0150504S4	1.5	0.5	2.5	4	50	4
ZR702 0150506S4	1.5	0.5	2.5	6	50	4
ZR702 0150508S4	1.5	0.5	2.5	8	50	4
ZR702 0150510S4	1.5	0.5	2.5	10	50	4
ZR702 0150512S4	1.5	0.5	2.5	12	50	4
ZR702 0150204	1.5	0.2	2.5	4	50	6

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZR702 2 Flutes Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR702 0150206	1.5	0.2	2.5	6	50	6
ZR702 0150208	1.5	0.2	2.5	8	50	6
ZR702 0150210	1.5	0.2	2.5	10	50	6
ZR702 0150215	1.5	0.2	2.5	15	50	6
ZR702 0200106S4	2	0.1	3	6	50	4
ZR702 0200108S4	2	0.1	3	8	50	4
ZR702 0200110S4	2	0.1	3	10	50	4
ZR702 0200112S4	2	0.1	3	12	50	4
ZR702 0200116S4	2	0.1	3	16	50	4
ZR702 0200120S4	2	0.1	3	20	50	4
ZR702 0200206S4	2	0.2	3	6	50	4
ZR702 0200208S4	2	0.2	3	8	50	4
ZR702 0200210S4	2	0.2	3	10	50	4
ZR702 0200212S4	2	0.2	3	12	50	4
ZR702 0200216S4	2	0.2	3	16	50	4
ZR702 0200220S4	2	0.2	3	20	50	4
ZR702 0200306S4	2	0.3	3	6	50	4
ZR702 0200308S4	2	0.3	3	8	50	4
ZR702 0200310S4	2	0.3	3	10	50	4
ZR702 0200312S4	2	0.3	3	12	50	4
ZR702 0200316S4	2	0.3	3	16	50	4
ZR702 0200320S4	2	0.3	3	20	50	4
ZR702 0200506S4	2	0.5	3	6	50	4
ZR702 0200508S4	2	0.5	3	8	50	4
ZR702 0200510S4	2	0.5	3	10	50	4
ZR702 0200512S4	2	0.5	3	12	50	4
ZR702 0200516S4	2	0.5	3	16	50	4
ZR702 0200520S4	2	0.5	3	20	50	4
ZR702 0200108	2	0.1	3	8	50	6
ZR702 0200112	2	0.1	3	12	50	6
ZR702 0200206	2	0.2	3	6	50	6
ZR702 0200209	2	0.2	3	9	50	6
ZR702 0200216	2	0.2	3	16	50	6
ZR702 0200306	2	0.3	3	6	50	6

Zamus Star  
E-Star  
U-Wing  
Zamus Thunder  
X-Star  
S-Wing  
A-Wing  
Standard  
Copper-Mate  
Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

# ZR702 2 Flutes Neck Radius End Mill

Endmill

	EDP No	DC	RE	APMX	LU	OAL	DCONMS
Zamus Star	ZR702 0200506	2	0.5	3	6	50	6
	ZR702 0200509	2	0.5	3	9	50	6
	ZR702 0200512	2	0.5	3	12	50	6
	ZR702 0200516	2	0.5	3	16	50	6
	ZR702 0250208S4	2.5	0.2	3.5	8	50	4
	ZR702 0250210S4	2.5	0.2	3.5	10	50	4
E-Star	ZR702 0250212S4	2.5	0.2	3.5	12	50	4
	ZR702 0250216S4	2.5	0.2	3.5	16	50	4
U-Wing	ZR702 0250308S4	2.5	0.3	3.5	8	50	4
	ZR702 0250310S4	2.5	0.3	3.5	10	50	4
	ZR702 0250312S4	2.5	0.3	3.5	12	50	4
	ZR702 0250316S4	2.5	0.3	3.5	16	50	4
Zamus Thunder	ZR702 0250508S4	2.5	0.5	3.5	8	50	4
	ZR702 0250510S4	2.5	0.5	3.5	10	50	4
	ZR702 0250512S4	2.5	0.5	3.5	12	50	4
	ZR702 0250516S4	2.5	0.5	3.5	16	50	4
X-Star	ZR702 0300108	3	0.1	4.5	8	55	6
	ZR702 0300110	3	0.1	4.5	10	55	6
	ZR702 0300112	3	0.1	4.5	12	55	6
S-Wing	ZR702 0300116	3	0.1	4.5	16	55	6
	ZR702 0300120	3	0.1	4.5	20	60	6
	ZR702 0300208	3	0.2	4.5	8	55	6
	ZR702 0300209	3	0.2	4.5	9	55	6
A-Wing	ZR702 0300210	3	0.2	4.5	10	55	6
	ZR702 0300212	3	0.2	4.5	12	55	6
	ZR702 0300216	3	0.2	4.5	16	55	6
	ZR702 0300220	3	0.2	4.5	20	60	6
Standard	ZR702 0300308	3	0.3	4.5	8	55	6
	ZR702 0300309	3	0.3	4.5	9	55	6
	ZR702 0300310	3	0.3	4.5	10	55	6
Copper-Mate	ZR702 0300312	3	0.3	4.5	12	55	6
	ZR702 0300314	3	0.3	4.5	14	55	6
	ZR702 0300316	3	0.3	4.5	16	55	6
Gra-Mate	ZR702 0300320	3	0.3	4.5	20	60	6

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZR702 2 Flutes Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR702 0300508	3	0.5	4.5	8	55	6
ZR702 0300509	3	0.5	4.5	9	55	6
ZR702 0300510	3	0.5	4.5	10	55	6
ZR702 0300512	3	0.5	4.5	12	55	6
ZR702 0300516	3	0.5	4.5	16	55	6
ZR702 0300520	3	0.5	4.5	20	60	6
ZR702 0301008	3	1	4.5	8	55	6
ZR702 0301010	3	1	4.5	10	55	6
ZR702 0301012	3	1	4.5	12	55	6
ZR702 0301016	3	1	4.5	16	55	6
ZR702 0301020	3	1	4.5	20	60	6
ZR702 0301025	3	1	4.5	25	60	6
ZR702 0400110	4	0.1	6	10	55	6
ZR702 0400112	4	0.1	6	12	55	6
ZR702 0400116	4	0.1	6	16	55	6
ZR702 0400120	4	0.1	6	20	60	6
ZR702 0400125	4	0.1	6	25	60	6
ZR702 0400210	4	0.2	6	10	55	6
ZR702 0400212	4	0.2	6	12	55	6
ZR702 0400216	4	0.2	6	16	55	6
ZR702 0400220	4	0.2	6	20	60	6
ZR702 0400225	4	0.2	6	25	60	6
ZR702 0400310	4	0.3	6	10	55	6
ZR702 0400312	4	0.3	6	12	55	6
ZR702 0400316	4	0.3	6	16	55	6
ZR702 0400320	4	0.3	6	20	60	6
ZR702 0400325	4	0.3	6	25	60	6
ZR702 0400510	4	0.5	6	10	55	6
ZR702 0400512	4	0.5	6	12	55	6
ZR702 0400516	4	0.5	6	16	55	6
ZR702 0400520	4	0.5	6	20	60	6
ZR702 0400525	4	0.5	6	25	60	6
ZR702 0400530	4	0.5	6	30	70	6
ZR702 0401010	4	1	6	10	55	6

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

# ZR702 2 Flutes Neck Radius End Mill

Endmill

	EDP No	DC	RE	APMX	LU	OAL	DCONMS
	ZR702 0401012	4	1	6	12	55	6
	ZR702 0401016	4	1	6	16	55	6
Zamus Star	ZR702 0401020	4	1	6	20	60	6
	ZR702 0401025	4	1	6	25	60	6
	ZR702 0401030	4	1	6	30	70	6
	ZR702 0500318	5	0.3	8	18	60	6
E-Star	ZR702 0600220	6	0.2	9	20	60	6
	ZR702 0600320	6	0.3	9	20	60	6
	ZR702 0600520	6	0.5	9	20	60	6
U-Wing	ZR702 0601020	6	1	9	20	60	6
	ZR702 0601520	6	1.5	9	20	60	6
	ZR702 0602020	6	2	9	20	60	6
Zamus Thunder	ZR702 0800225	8	0.2	12	25	60	8
	ZR702 0800325	8	0.3	12	25	60	8
	ZR702 0800525	8	0.5	12	25	60	8
	ZR702 0801025	8	1	12	25	60	8
X-Star	ZR702 0801525	8	1.5	12	25	60	8
	ZR702 1000232	10	0.2	15	32	70	10
S-Wing	ZR702 1000332	10	0.3	15	32	70	10
	ZR702 1000532	10	0.5	15	32	70	10
	ZR702 1001032	10	1	15	32	70	10
	ZR702 1001532	10	1.5	15	32	70	10
A-Wing	ZR702 1002032	10	2	15	32	70	10
	ZR702 1200338	12	0.3	18	38	80	12
	ZR702 1200538	12	0.5	18	38	80	12
	ZR702 1201038	12	1	18	38	80	12
Standard	ZR702 1201538	12	1.5	18	38	80	12
	ZR702 1202038	12	2	18	38	80	12

Copper  
-Mate

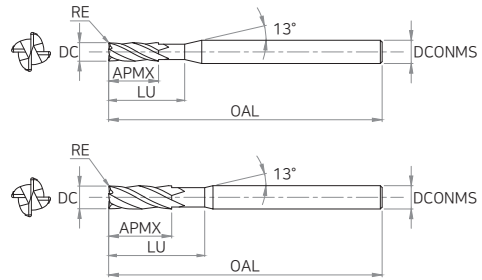
Gra  
-Mate

## ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

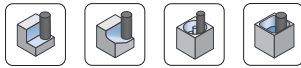
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZR704 4 Flutes Neck Radius End Mill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR704 0100103S4	1	0.1	2	3	50	4
ZR704 0100104S4	1	0.1	2	4	50	4
ZR704 0100106S4	1	0.1	2	6	50	4
ZR704 0100203S4	1	0.2	2	3	50	4
ZR704 0100204S4	1	0.2	2	4	50	4
ZR704 0100206S4	1	0.2	2	6	50	4
ZR704 0100303S4	1	0.3	2	3	50	4
ZR704 0100304S4	1	0.3	2	4	50	4
ZR704 0100306S4	1	0.3	2	6	50	4
ZR704 0150104S4	1.5	0.1	2.5	4	50	4
ZR704 0150106S4	1.5	0.1	2.5	6	50	4
ZR704 0150204S4	1.5	0.2	2.5	4	50	4
ZR704 0150206S4	1.5	0.2	2.5	6	50	4
ZR704 0150304S4	1.5	0.3	2.5	4	50	4
ZR704 0150306S4	1.5	0.3	2.5	6	50	4
ZR704 0200106S4	2	0.1	3	6	50	4
ZR704 0200108S4	2	0.1	3	8	50	4
ZR704 0200206S4	2	0.2	3	6	50	4
ZR704 0200208S4	2	0.2	3	8	50	4
ZR704 0200306S4	2	0.3	3	6	50	4

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZR704 4 Flutes Neck Radius End Mill

Endmill

	EDP No	DC	RE	APMX	LU	OAL	DCONMS
Zamus Star	ZR704 0200308S4	2	0.3	3	8	50	4
	ZR704 0200506S4	2	0.5	3	6	50	4
	ZR704 0200508S4	2	0.5	3	8	50	4
	ZR704 0200208	2	0.2	3	8	50	6
	ZR704 0200210	2	0.2	3	10	50	6
E-Star	ZR704 0200212	2	0.2	3	12	50	6
	ZR704 0250106S4	2.5	0.1	3.5	6	50	4
U-Wing	ZR704 0300108	3	0.1	4	8	55	6
	ZR704 0300110	3	0.1	4	10	55	6
	ZR704 0300112	3	0.1	4	12	55	6
Zamus Thunder	ZR704 0300116	3	0.1	4	16	55	6
	ZR704 0300120	3	0.1	4	20	60	6
	ZR704 0300208	3	0.2	4	8	55	6
	ZR704 0300210	3	0.2	4	10	55	6
X-Star	ZR704 0300212	3	0.2	4	12	55	6
	ZR704 0300216	3	0.2	4	16	55	6
	ZR704 0300220	3	0.2	4	20	60	6
S-Wing	ZR704 0300308	3	0.3	4	8	55	6
	ZR704 0300309	3	0.3	4	9	55	6
	ZR704 0300310	3	0.3	4	10	55	6
	ZR704 0300312	3	0.3	4	12	55	6
	ZR704 0300316	3	0.3	4	16	55	6
A-Wing	ZR704 0300320	3	0.3	4	20	60	6
	ZR704 0300508	3	0.5	4	8	55	6
	ZR704 0300509	3	0.5	4	9	55	6
Standard	ZR704 0300510	3	0.5	4	10	55	6
	ZR704 0300512	3	0.5	4	12	55	6
	ZR704 0300516	3	0.5	4	16	55	6
	ZR704 0300520	3	0.5	4	20	60	6
Copper-Mate	ZR704 0301008	3	1	4	8	55	6
	ZR704 0301010	3	1	4	10	55	6
	ZR704 0301012	3	1	4	12	55	6
Gra-Mate	ZR704 0301016	3	1	4	16	55	6
	ZR704 0301020	3	1	4	20	60	6

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30~50	Cast Iron ~FCD500					
◎	◎		○	○						

# ZR704 4 Flutes Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR704 0400110	4	0.1	6	10	55	6
ZR704 0400112	4	0.1	6	12	55	6
ZR704 0400116	4	0.1	6	16	55	6
ZR704 0400120	4	0.1	6	20	60	6
ZR704 0400125	4	0.1	6	25	60	6
ZR704 0400210	4	0.2	6	10	55	6
ZR704 0400212	4	0.2	6	12	55	6
ZR704 0400216	4	0.2	6	16	55	6
ZR704 0400220	4	0.2	6	20	60	6
ZR704 0400225	4	0.2	6	25	60	6
ZR704 0400310	4	0.3	6	10	55	6
ZR704 0400312	4	0.3	6	12	55	6
ZR704 0400316	4	0.3	6	16	55	6
ZR704 0400320	4	0.3	6	20	60	6
ZR704 0400325	4	0.3	6	25	55	6
ZR704 0400510	4	0.5	6	10	55	6
ZR704 0400512	4	0.5	6	12	55	6
ZR704 0400516	4	0.5	6	16	55	6
ZR704 0400520	4	0.5	6	20	60	6
ZR704 0400525	4	0.5	6	25	60	6
ZR704 0401010	4	1	6	10	55	6
ZR704 0401012	4	1	6	12	55	6
ZR704 0401016	4	1	6	16	55	6
ZR704 0401020	4	1	6	20	60	6
ZR704 0401025	4	1	6	25	60	6
ZR704 0600220	6	0.2	9	20	60	6
ZR704 0600320	6	0.3	9	20	60	6
ZR704 0600520	6	0.5	9	20	60	6
ZR704 0601020	6	1	9	20	60	6
ZR704 0601520	6	1.5	9	20	60	6
ZR704 0602020	6	2	9	20	60	6
ZR704 0800225	8	0.2	12	25	60	8
ZR704 0800325	8	0.3	12	25	60	8
ZR704 0800525	8	0.5	12	25	60	8

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZR704 4 Flutes Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR704 0801025	8	1	12	25	60	8
ZR704 0801525	8	1.5	12	25	60	8
ZR704 0802025	8	2	12	25	60	8
ZR704 1000232	10	0.2	15	32	70	10
ZR704 1000332	10	0.3	15	32	70	10
ZR704 1000532	10	0.5	15	32	70	10
ZR704 1001032	10	1	15	32	70	10
ZR704 1001532	10	1.5	15	32	70	10
ZR704 1002032	10	2	15	32	70	10
ZR704 1200338	12	0.3	18	38	80	12
ZR704 1200538	12	0.5	18	38	80	12
ZR704 1201038	12	1	18	38	80	12
ZR704 1201538	12	1.5	18	38	80	12
ZR704 1202038	12	2	18	38	80	12

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper -Mate

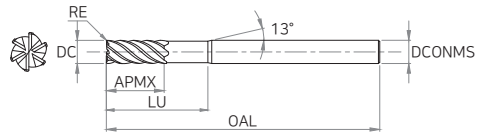
Gra -Mate

## ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

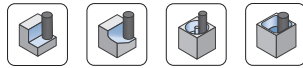
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FC500					
◎	◎		○	○						

# ZR706 6 Flutes Neck Radius End Mill



## ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR706 0600314	6	0.3	6	14	50	6
ZR706 0600514	6	0.5	6	14	50	6
ZR706 0800524	8	0.5	8	24	60	8
ZR706 0801024	8	1	8	24	60	8
ZR706 1000530	10	0.5	10	30	70	10
ZR706 1001030	10	1	10	30	70	10
ZR706 1200530	12	0.5	12	30	75	12
ZR706 1201030	12	1	12	30	75	12

## ► Applicable Working Material

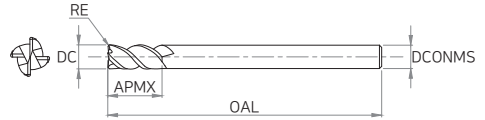
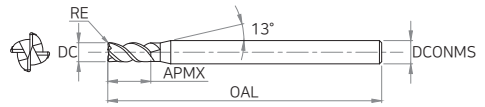
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

- Endmill
- Zamus Star
- E-Star
- U-Wing
- Zamus Thunder
- X-Star
- S-Wing
- A-Wing
- Standard
- Copper-Mate
- Gra-Mate

# ZR714 4 Flutes Radius End Mill

Endmill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	h5
Ø8 ~ Ø12	0 ~ -0.015	



EDP No	DC	RE	APMX	OAL	DCON MS	EDP No	DC	RE	APMX	OAL	DCON MS
ZR714 0303	3	0.3	8	50	6	ZR714 1005	10	0.5	25	70	10
ZR714 0305	3	0.5	8	50	6	ZR714 1010	10	1	25	70	10
ZR714 0403	4	0.3	11	50	6	ZR714 1015	10	1.5	25	70	10
ZR714 0405	4	0.5	11	50	6	ZR714 1020	10	2	25	70	10
ZR714 0410	4	1	11	50	6	ZR714 1025	10	2.5	25	70	10
ZR714 0603	6	0.3	15	60	6	ZR714 1030	10	3	25	70	10
ZR714 0605	6	0.5	15	60	6	ZR714 1203	12	0.3	30	80	12
ZR714 0610	6	1	15	60	6	ZR714 1205	12	0.5	30	80	12
ZR714 0803	8	0.3	20	60	8	ZR714 1210	12	1	30	80	12
ZR714 0805	8	0.5	20	60	8	ZR714 1215	12	1.5	30	80	12
ZR714 0810	8	1	20	60	8	ZR714 1220	12	2	30	80	12
ZR714 0815	8	1.5	20	60	8	ZR714 1225	12	2.5	30	80	12
ZR714 0820	8	2	20	60	8	ZR714 1230	12	3	30	80	12
ZR714 1003	10	0.3	25	70	10						

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

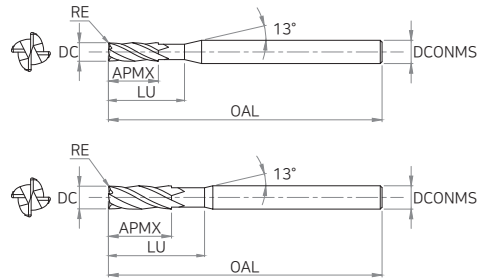
Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

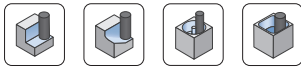
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30-50	Cast Iron ~FC500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

# ZR724 4 Flutes Neck Radius End Mill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZR724 0600520	6	0.5	9	20	90	6
ZR724 0601020	6	1	9	20	90	6
ZR724 0800525	8	0.5	12	25	100	8
ZR724 0801025	8	1	12	25	100	8
ZR724 1000532	10	0.5	15	32	100	10
ZR724 1001032	10	1	15	32	100	10
ZR724 1002032	10	2	15	32	100	10
ZR724 1200538	12	0.5	18	38	110	12
ZR724 1201038	12	1	18	38	110	12
ZR724 1202038	12	2	18	38	110	12

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

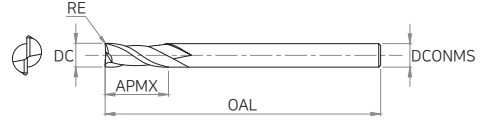
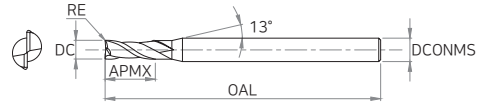
Copper-Mate

Gra-Mate

# ZR732 2 Flutes Long Shank Radius End Mill

Endmill

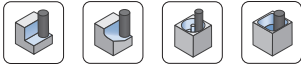
Zamus Star



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	

U-Wing



Zamus Thunder

EDP No	DC	RE	APMX	OAL	DCONMS
ZR732 01001	1	0.1	2	50	6
ZR732 01002	1	0.2	2	50	6
ZR732 01003	1	0.3	2	50	6
ZR732 01501	1.5	0.1	3	50	6
ZR732 01502	1.5	0.2	3	50	6
ZR732 01503	1.5	0.3	3	50	6
ZR732 01505	1.5	0.5	3	50	6
ZR732 02001	2	0.1	5	50	6
ZR732 02002	2	0.2	5	50	6
ZR732 02003	2	0.3	5	50	6
ZR732 02005	2	0.5	5	50	6
ZR732 02501	2.5	0.1	7	60	6
ZR732 02502	2.5	0.2	7	60	6
ZR732 02503	2.5	0.3	7	60	6
ZR732 02505	2.5	0.5	7	60	6
ZR732 03001	3	0.1	8	60	6
ZR732 03002	3	0.2	8	60	6
ZR732 03003	3	0.3	8	60	6
ZR732 03005	3	0.5	8	60	6
ZR732 04001	4	0.1	10	70	6

S-Wing

A-Wing

Standard

Copper -Mate

Gra -Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

# ZR732

## 2 Flutes Long Shank Radius End Mill

Endmill

EDP No	DC	RE	APMX	OAL	DCONMS
ZR732 04002	4	0.2	10	70	6
ZR732 04003	4	0.3	10	70	6
ZR732 04005	4	0.5	10	70	6
ZR732 04010	4	1	10	70	6
ZR732 05001	5	0.1	13	80	6
ZR732 05002	5	0.2	13	80	6
ZR732 05003	5	0.3	13	80	6
ZR732 05005	5	0.5	13	80	6
ZR732 05010	5	1	13	80	6
ZR732 06001	6	0.1	15	90	6
ZR732 06002	6	0.2	15	90	6
ZR732 06003	6	0.3	15	90	6
ZR732 06005	6	0.5	15	90	6
ZR732 06010	6	1	15	90	6
ZR732 08001	8	0.1	20	100	8
ZR732 08002	8	0.2	20	100	8
ZR732 08003	8	0.3	20	100	8
ZR732 08005	8	0.5	20	100	8
ZR732 08010	8	1	20	100	8
ZR732 08020	8	2	20	100	8
ZR732 10002	10	0.2	25	100	10
ZR732 10003	10	0.3	25	100	10
ZR732 10005	10	0.5	25	100	10
ZR732 10010	10	1	25	100	10
ZR732 10020	10	2	25	100	10
ZR732 12002	12	0.2	30	110	12
ZR732 12003	12	0.3	30	110	12
ZR732 12005	12	0.5	30	110	12
ZR732 12010	12	1	30	110	12
ZR732 12020	12	2	30	110	12

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

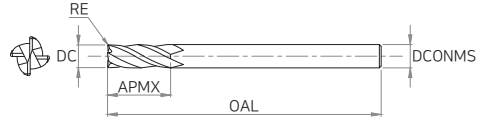
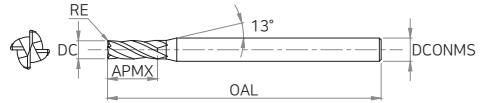
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

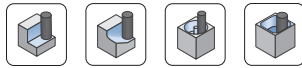
# ZR734 4 Flutes Long Shank Radius End Mill

Endmill



► Tolerance

DC		Shank Dia
~ Ø6	0 ~ -0.012	
Ø8 ~ Ø12	0 ~ -0.015	h5



EDP No	DC	RE	APMX	OAL	DCON MS	EDP No	DC	RE	APMX	OAL	DCON MS
ZR734 01001	1	0.1	2	50	6	ZR734 04002	4	0.2	10	70	6
ZR734 01002	1	0.2	2	50	6	ZR734 04003	4	0.3	10	70	6
ZR734 01003	1	0.3	2	50	6	ZR734 04005	4	0.5	10	70	6
ZR734 01501	1.5	0.1	3	50	6	ZR734 04010	4	1	10	70	6
ZR734 01502	1.5	0.2	3	50	6	ZR734 05001	5	0.1	13	80	6
ZR734 01503	1.5	0.3	3	50	6	ZR734 05002	5	0.2	13	80	6
ZR734 01505	1.5	0.5	3	50	6	ZR734 05003	5	0.3	13	80	6
ZR734 02001	2	0.1	5	50	6	ZR734 05005	5	0.5	13	80	6
ZR734 02002	2	0.2	5	50	6	ZR734 05010	5	1	13	80	6
ZR734 02003	2	0.3	5	50	6	ZR734 06001	6	0.1	15	90	6
ZR734 02005	2	0.5	5	50	6	ZR734 06002	6	0.2	15	90	6
ZR734 02501	2.5	0.1	7	60	6	ZR734 06003	6	0.3	15	90	6
ZR734 02502	2.5	0.2	7	60	6	ZR734 06005	6	0.5	15	90	6
ZR734 02503	2.5	0.3	7	60	6	ZR734 06010	6	1	15	90	6
ZR734 02505	2.5	0.5	7	60	6	ZR734 08001	8	0.1	20	100	8
ZR734 03001	3	0.1	8	60	6	ZR734 08002	8	0.2	20	100	8
ZR734 03002	3	0.2	8	60	6	ZR734 08003	8	0.3	20	100	8
ZR734 03003	3	0.3	8	60	6	ZR734 08005	8	0.5	20	100	8
ZR734 03005	3	0.5	8	60	6	ZR734 08010	8	1	20	100	8
ZR734 04001	4	0.1	10	70	6	ZR734 08020	8	2	20	100	8

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

# ZR734 4 Flutes Long Shank Radius End Mill

Endmill

EDP No	DC	RE	APMX	OAL	DCON MS
ZR734 10002	10	0.2	25	100	10
ZR734 10003	10	0.3	25	100	10
ZR734 10005	10	0.5	25	100	10
ZR734 10010	10	1	25	100	10
ZR734 10020	10	2	25	100	10

EDP No	DC	RE	APMX	OAL	DCON MS
ZR734 12002	12	0.2	30	110	12
ZR734 12003	12	0.3	30	110	12
ZR734 12005	12	0.5	30	110	12
ZR734 12010	12	1	30	110	12
ZR734 12020	12	2	30	110	12

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

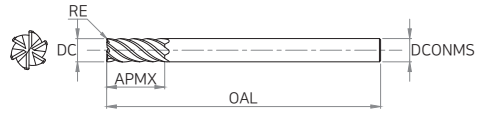
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZR736 6 Flutes Radius End Mill

Endmill



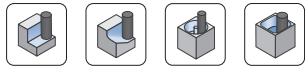
Zamus Star

E-Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5

U-Wing



Zamus Thunder

EDP No	DC	RE	APMX	OAL	DCONMS
ZR736 06005	6	0.5	15	90	6
ZR736 06010	6	1	15	90	6
ZR736 08005	8	0.5	20	100	8
ZR736 08010	8	1	20	100	8
ZR736 10005	10	0.5	25	100	10
ZR736 10010	10	1	25	100	10
ZR736 12005	12	0.5	30	110	12
ZR736 12010	12	1	30	110	12

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

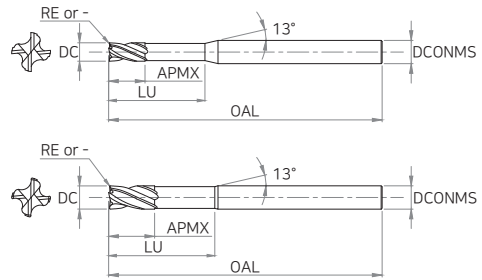
Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

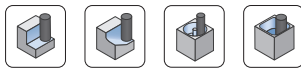
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZS1(2)04 4 Flutes Neck Radius End Mill



► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



CARBIDE
AlTiN
4
38° HELIX
R ±0.01
R ±0.015
DATA P.611

Ø6 OR UNDER     ABOVE Ø6

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZS104 010	1	-	1.5	4	45	4
ZS204 010	1	0.05	1.5	4	45	4
ZS104 020	2	-	3	6	45	4
ZS204 020	2	0.05	3	6	45	4
ZS104 030	3	-	4	7	45	6
ZS204 030	3	0.1	4	7	45	6
ZS104 040	4	-	5	9	45	6
ZS204 040	4	0.1	5	9	45	6
ZS104 060	6	-	7	14	50	6
ZS204 060	6	0.2	7	14	50	6
ZS104 080	8	-	9	18	60	8
ZS204 080	8	0.2	9	18	60	8
ZS104 100	10	-	12	25	75	10
ZS204 100	10	0.2	12	25	75	10
ZS104 120	12	-	15	30	75	12
ZS204 120	12	0.3	15	30	75	12

► Applicable Working Material

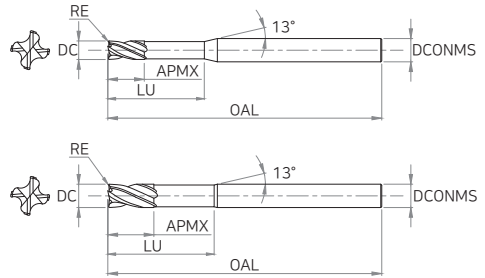
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

- Endmill
- Zamus Star
- E-Star
- U-Wing
- Zamus Thunder
- X-Star
- S-Wing
- A-Wing
- Standard
- Copper-Mate
- Gra-Mate

# ZS204 4 Flutes Neck Radius End Mill

Endmill



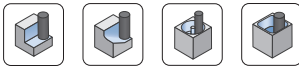
Zamus Star

E-Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5

U-Wing



Zamus Thunder

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZS204 02000507	2	0.05	2.5	7	50	4
ZS204 0200107	2	0.1	2.5	7	50	4
ZS204 0300109	3	0.1	4	9	55	6
ZS204 0300209	3	0.2	4	9	55	6
ZS204 0300309	3	0.3	4	9	55	6
ZS204 0300312	3	0.3	4	12	55	6
ZS204 0300316	3	0.3	4	16	55	6
ZS204 0400212	4	0.2	5	12	55	6
ZS204 0400312	4	0.3	5	12	55	6
ZS204 0400316	4	0.3	5	16	55	6
ZS204 0400320	4	0.3	5	20	55	6
ZS204 0400512	4	0.5	5	12	55	6
ZS204 0400516	4	0.5	5	16	55	6
ZS204 0400520	4	0.5	5	20	55	6
ZS204 0401012	4	1	5	12	55	6
ZS204 0500116	5	0.1	6	16	60	6
ZS204 0500216	5	0.2	6	16	60	6
ZS204 0500316	5	0.3	6	16	60	6
ZS204 0500516	5	0.5	6	16	60	6
ZS204 0501016	5	1	6	16	60	6

Copper -Mate

Gra -Mate

Standard

S-Wing

X-Star

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRC30~50	~FCD500					
◎	◎		○	○						

# ZS204 4 Flutes Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZS204 0600120	6	0.1	7	20	60	6
ZS204 0600220	6	0.2	7	20	60	6
ZS204 0600320	6	0.3	7	20	60	6
ZS204 0600520	6	0.5	7	20	60	6
ZS204 0601020	6	1	7	20	60	6
ZS204 0601520	6	1.5	7	20	60	6
ZS204 0800125	8	0.1	9	25	60	8
ZS204 0800225	8	0.2	9	25	60	8
ZS204 0800325	8	0.3	9	25	60	8
ZS204 0800525	8	0.5	9	25	60	8
ZS204 0801025	8	1	9	25	60	8
ZS204 0801525	8	1.5	9	25	60	8
ZS204 0802025	8	2	9	25	60	8
ZS204 1000232	10	0.2	11	32	75	10
ZS204 1000332	10	0.3	11	32	75	10
ZS204 1000532	10	0.5	11	32	75	10
ZS204 1001032	10	1	11	32	75	10
ZS204 1001532	10	1.5	11	32	75	10
ZS204 1002032	10	2	11	32	75	10
ZS204 1200238	12	0.2	12	38	75	12
ZS204 1200338	12	0.3	12	38	75	12
ZS204 1200538	12	0.5	12	38	75	12
ZS204 1201038	12	1	12	38	75	12
ZS204 1201538	12	1.5	12	38	75	12
ZS204 1202038	12	2	12	38	75	12

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

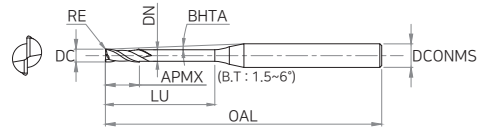
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

# ZSLNR20 2 Flutes Long Neck Radius End Mill

Endmill



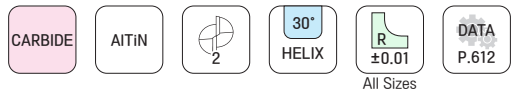
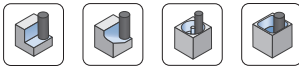
Zamus Star

E-Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5

U-Wing



Zamus Thunder

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNR20 02-0.5-005	0.2	0.05	0.15	0.5	0.17	50	4	11.4	0.9	1	1	1.1	12
ZSLNR20 02-1-005	0.2	0.05	0.15	1	0.17	50	4	10.9	1.6	1.7	1.9	2	2.3
ZSLNR20 02-1.5-005	0.2	0.05	0.15	1.5	0.17	50	4	10.3	2.1	2.3	2.5	2.7	3
ZSLNR20 02-2-005	0.2	0.05	0.15	2	0.17	50	4	9.9	2.8	3.1	3.4	3.6	4.1
ZSLNR20 03-1-005	0.3	0.05	0.25	1	0.27	50	4	10.8	1.4	1.5	1.6	1.7	1.9
ZSLNR20 03-1.5-005	0.3	0.05	0.25	1.5	0.27	50	4	10.3	2.1	2.3	2.5	2.7	3
ZSLNR20 03-2-005	0.3	0.05	0.25	2	0.27	50	4	9.8	2.7	2.9	3.1	3.3	3.6
ZSLNR20 03-2.5-005	0.3	0.05	0.25	2.5	0.27	50	4	9.4	3.2	3.5	3.7	3.9	4.3
ZSLNR20 03-3-005	0.3	0.05	0.25	3	0.27	50	4	9	3.9	4.3	4.6	4.9	5.4
ZSLNR20 04-1-005	0.4	0.05	0.3	1	0.37	50	4	10.8	1.4	1.5	1.6	1.7	1.9
ZSLNR20 04-1.5-005	0.4	0.05	0.3	1.5	0.37	50	4	10.3	2	2.1	2.2	2.3	2.5
ZSLNR20 04-2-005	0.4	0.05	0.3	2	0.37	50	4	9.8	2.7	2.9	3.1	3.3	3.6
ZSLNR20 04-2.5-005	0.4	0.05	0.3	2.5	0.37	50	4	9.4	3.2	3.5	3.7	3.9	4.3
ZSLNR20 04-3-005	0.4	0.05	0.3	3	0.37	50	4	9	3.8	4	4.3	4.5	4.9
ZSLNR20 04-3.5-005	0.4	0.05	0.3	3.5	0.37	50	4	8.6	4.3	4.6	4.9	5.1	5.5
ZSLNR20 04-4-005	0.4	0.05	0.3	4	0.37	50	4	8.3	5	5.4	5.8	6.1	6.6
ZSLNR20 04-2-01	0.4	0.1	0.3	2	0.37	50	4	9.8	2.7	2.9	3.1	3.3	3.6
ZSLNR20 04-3-01	0.4	0.1	0.3	3	0.37	50	4	9	3.8	4	4.3	4.5	4.9
ZSLNR20 04-4-01	0.4	0.1	0.3	4	0.37	50	4	8.3	5	5.4	5.8	6.1	6.6
ZSLNR20 05-1-005	0.5	0.05	0.35	1	0.47	50	4	10.8	1.4	1.5	1.6	1.7	1.9

Copper -Mate

Gra -Mate

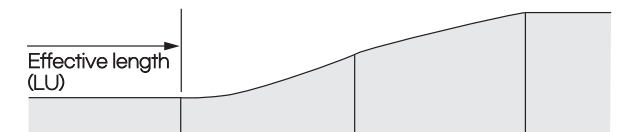
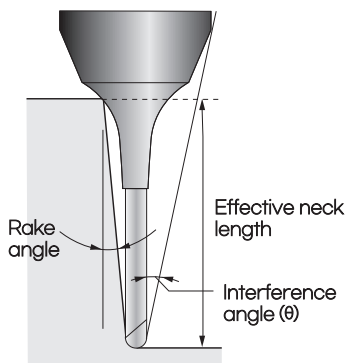
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRC30-50	~FCD500					
◎	◎		○	○						

# ZSLNR20 2 Flutes Long Neck Radius End Mill

Endmill



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNR20 05-2-005	0.5	0.05	0.35	2	0.47	50	4	9.7	2.5	2.6	2.8	2.9	3.1
ZSLNR20 05-3-005	0.5	0.05	0.35	3	0.47	50	4	8.9	3.8	4	4.3	4.5	4.9
ZSLNR20 05-4-005	0.5	0.05	0.35	4	0.47	50	4	8.2	4.8	5.2	5.4	5.7	6.1
ZSLNR20 05-5-005	0.5	0.05	0.35	5	0.47	50	4	7.6	6.1	6.6	6.9	7.3	7.8
ZSLNR20 05-6-005	0.5	0.05	0.35	6	0.47	50	4	7	7.2	7.7	8.1	8.4	9
ZSLNR20 05-1-01	0.5	0.1	0.35	1	0.47	50	4	10.8	1.4	1.5	1.6	1.7	1.9
ZSLNR20 05-2-01	0.5	0.1	0.35	2	0.47	50	4	9.8	2.5	2.6	2.8	2.9	3.1
ZSLNR20 05-3-01	0.5	0.1	0.35	3	0.47	50	4	8.9	3.8	4	4.3	4.5	4.9
ZSLNR20 05-4-01	0.5	0.1	0.35	4	0.47	50	4	8.2	4.8	5.2	5.4	5.7	6.1
ZSLNR20 05-5-01	0.5	0.1	0.35	5	0.47	50	4	7.6	6.1	6.5	6.9	7.2	7.8
ZSLNR20 05-6-01	0.5	0.1	0.35	6	0.47	50	4	7.1	7.2	7.7	8.1	8.4	9
ZSLNR20 06-2-01	0.6	0.1	0.4	2	0.57	50	4	9.7	2.5	2.6	2.8	2.9	3.1
ZSLNR20 06-4-01	0.6	0.1	0.4	4	0.57	50	4	8.1	4.8	5.2	5.4	5.7	6.1
ZSLNR20 06-6-01	0.6	0.1	0.4	6	0.57	50	4	7	7.2	7.7	8.1	8.4	9
ZSLNR20 06-8-01	0.6	0.1	0.4	8	0.57	50	4	6.1	9.3	9.9	10.3	10.7	11
ZSLNR20 06-10-01	0.6	0.1	0.4	10	0.57	50	4	5.5	11.5	12.1	12.5	13	13.7
ZSLNR20 08-4-01	0.8	0.1	0.5	4	0.77	50	4	8	4.8	5.2	5.4	5.7	6.1
ZSLNR20 08-6-01	0.8	0.1	0.5	6	0.77	50	4	6.8	7	7.4	7.7	7.9	8.4
ZSLNR20 08-8-01	0.8	0.1	0.5	8	0.77	50	4	5.9	9.3	9.9	10.3	10.7	11.4
ZSLNR20 08-12-01	0.8	0.1	0.5	12	0.77	50	4	4.7	13.6	14.2	14.7	15.2	16

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZSLNR20

## 2 Flutes Long Neck Radius End Mill

Endmill

	EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
										0.5°	1°	1.5°	2°	3°
	ZSLNR20 08-4-02	0.8	0.2	0.5	4	0.77	50	4	8	4.8	5.1	5.4	5.6	6.1
	ZSLNR20 08-6-02	0.8	0.2	0.5	6	0.77	50	4	6.9	7	7.3	7.7	7.9	8.4
Zamus Star	ZSLNR20 10-4-01	1	0.1	0.8	4	0.94	50	4	7.7°	4.7	4.9	5.1	5.2	5.5
	ZSLNR20 10-6-01	1	0.1	0.8	6	0.94	50	4	6.6°	7.1	7.4	7.7	8	8.5
	ZSLNR20 10-8-01	1	0.1	0.8	8	0.94	50	4	5.7°	9.2	9.6	9.9	10.2	10.8
	ZSLNR20 10-10-01	1	0.1	0.8	10	0.94	50	4	5.1°	11.6	12.1	12.6	13	13.7
E-Star	ZSLNR20 10-4-02	1	0.2	0.8	4	0.94	50	4	7.8°	4.7	4.9	5.1	5.2	5.5
	ZSLNR20 10-6-02	1	0.2	0.8	6	0.94	50	4	6.6°	7.1	7.4	7.7	8	8.5
	ZSLNR20 10-8-02	1	0.2	0.8	8	0.94	50	4	5.8°	9.2	9.6	9.9	10.2	10.8
U-Wing	ZSLNR20 10-10-02	1	0.2	0.8	10	0.94	50	4	5.1°	11.6	12.1	12.6	13	13.7
	ZSLNR20 10-6-03	1	0.3	0.8	6	0.94	50	4	6.7°	7.1	7.4	7.7	8	8.4
	ZSLNR20 10-10-03	1	0.3	0.8	10	0.94	50	4	5.1°	11.5	12.1	12.6	13	13.7
Zamus Thunder	ZSLNR20 10-12-01	1	0.1	0.8	12	0.94	55	4	4.5°	13.7	14.3	14.8	15.3	16
	ZSLNR20 10-12-02	1	0.2	0.8	12	0.94	55	4	4.6°	13.7	14.3	14.8	15.2	16
	ZSLNR20 10-16-01	1	0.1	0.8	16	0.94	60	4	3.8°	17.9	18.6	19.2	19.7	21.3
	ZSLNR20 10-20-01	1	0.1	0.8	20	0.94	60	4	3.2°	22	22.8	23.5	24	26.7
X-Star	ZSLNR20 10-16-02	1	0.2	0.8	16	0.94	60	4	3.8°	17.9	18.6	19.2	19.7	21.3
	ZSLNR20 10-20-02	1	0.2	0.8	20	0.94	60	4	3.2°	22	22.8	23.5	24	26.6
	ZSLNR20 10-16-03	1	0.3	0.8	16	0.94	60	4	3.8°	17.9	18.6	19.1	19.6	21.3
S-Wing	ZSLNR20 10-20-03	1	0.3	0.8	20	0.94	60	4	3.2°	22	22.8	23.5	24	26.6
	ZSLNR20 15-4-01	1.5	0.1	1.35	4	1.42	50	4	7.2	4.8	4.9	5.1	5.3	5.5
	ZSLNR20 15-8-01	1.5	0.1	1.35	8	1.42	50	4	5.2	9.2	9.6	10	10.3	10.8
A-Wing	ZSLNR20 15-12-01	1.5	0.1	1.35	12	1.42	55	4	4	13.4	13.9	14.3	14.7	16.1
	ZSLNR20 15-15-01	1.5	0.1	1.35	15	1.42	55	4	3.5	16.9	17.6	18.1	18.6	20.1
	ZSLNR20 15-20-01	1.5	0.1	1.35	20	1.42	60	4	2.8	22.1	22.9	23.5	24.1	-
Standard	ZSLNR20 15-4-02	1.5	0.2	1.35	4	1.42	50	4	7.3	4.7	4.9	5.1	5.3	5.5
	ZSLNR20 15-8-02	1.5	0.2	1.35	8	1.42	50	4	5.2	9.2	9.6	10	10.3	10.8
	ZSLNR20 15-12-02	1.5	0.2	1.35	12	1.42	55	4	4.1	13.4	13.9	14.3	14.7	16.1
	ZSLNR20 15-15-02	1.5	0.2	1.35	15	1.42	55	4	3.5	16.9	17.5	18.1	18.6	20
Copper-Mate	ZSLNR20 15-20-02	1.5	0.2	1.35	20	1.42	60	4	2.8	22.1	22.9	23.5	24.1	-
	ZSLNR20 15-8-03	1.5	0.3	1.35	8	1.42	50	4	5.2	9.2	9.6	10	10.3	10.8
	ZSLNR20 15-15-03	1.5	0.3	1.35	15	1.42	55	4	3.5	16.9	17.5	18.1	18.6	20
Gra-Mate	ZSLNR20 15-20-03	1.5	0.3	1.35	20	1.42	60	4	2.8	22.1	22.9	23.5	24	-
	ZSLNR20 20-6-02	2	0.2	1.7	6	1.92	50	4	5.4	6.8	7.1	7.3	7.5	8.1

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225 ~325	HRc30~50							
◎	◎		○	○						

# ZSLNR20 2 Flutes Long Neck Radius End Mill

Endmill

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNR20 20-8-02	2	0.2	1.7	8	1.92	50	4	4.6	8.9	9.2	9.4	9.7	10.8
ZSLNR20 20-12-02	2	0.2	1.7	12	1.92	55	4	3.5	13.4	13.9	14.3	14.7	16.1
ZSLNR20 20-16-02	2	0.2	1.7	16	1.92	55	4	2.8	17.6	18.1	18.6	19.3	-
ZSLNR20 20-20-02	2	0.2	1.7	20	1.92	60	4	2.4	22.1	22.9	23.5	24.1	-
ZSLNR20 20-25-02	2	0.2	1.7	25	1.92	65	4	2	27.3	28.2	28.8	-	-
ZSLNR20 20-30-02	2	0.2	1.7	30	1.92	70	4	1.7	32.5	33.4	34.4	-	-
ZSLNR20 20-8-03	2	0.3	1.7	8	1.92	50	4	4.6	8.9	9.2	9.4	9.7	10.7
ZSLNR20 20-16-03	2	0.3	1.7	16	1.92	55	4	2.8	17.6	18.1	18.6	19.3	-
ZSLNR20 20-20-03	2	0.3	1.7	20	1.92	60	4	2.4	22.1	22.9	23.5	24	-
ZSLNR20 20-6-05	2	0.5	1.7	6	1.92	50	4	5.5	6.8	7.1	7.3	7.4	8
ZSLNR20 20-8-05	2	0.5	1.7	8	1.92	50	4	4.7	8.9	9.2	9.4	9.6	10.7
ZSLNR20 20-12-05	2	0.5	1.7	12	1.92	55	4	3.5	13.4	13.9	14.3	14.6	16
ZSLNR20 20-16-05	2	0.5	1.7	16	1.92	55	4	2.9	17.6	18.1	18.6	19.2	-
ZSLNR20 20-20-05	2	0.5	1.7	20	1.92	60	4	2.4	22.1	22.9	23.5	24	-
ZSLNR20 20-25-05	2	0.5	1.7	25	1.92	65	4	2	27.3	28.1	28.8	-	-
ZSLNR20 20-30-05	2	0.5	1.7	30	1.92	70	4	1.7	32.5	33.4	34.3	-	-
ZSLNR20 20-8-08	2	0.8	1.7	8	1.92	50	4	4.8	8.9	9.2	9.4	9.6	10.6
ZSLNR20 20-16-08	2	0.8	1.7	16	1.92	55	4	2.9	17.6	18.1	18.6	19.2	-
ZSLNR20 20-20-08	2	0.8	1.7	20	1.92	60	4	2.4	22.1	22.8	23.5	24	-
ZSLNR20 30-8-02	3	0.2	2.5	8	2.86	55	6	5.7	9	9.3	9.5	9.9	10.9
ZSLNR20 30-12-02	3	0.2	2.5	12	2.86	60	6	4.5	13.1	13.5	14	14.7	16.2
ZSLNR20 30-16-02	3	0.2	2.5	16	2.86	60	6	3.8	17.7	18.2	18.7	19.5	21.6
ZSLNR20 30-20-02	3	0.2	2.5	20	2.86	65	6	3.2	21.8	22.4	23.1	24.2	26.9
ZSLNR20 30-30-02	3	0.2	2.5	30	2.86	75	6	2.4	32.6	33.5	34.5	36.2	-
ZSLNR20 30-35-02	3	0.2	2.5	35	2.86	80	6	2.1	37.7	38.7	40.2	42.2	-
ZSLNR20 30-8-03	3	0.3	2.5	8	2.86	55	6	5.7	9	9.3	9.5	9.9	10.9
ZSLNR20 30-16-03	3	0.3	2.5	16	2.86	60	6	3.8	17.7	18.2	18.7	19.4	21.5
ZSLNR20 30-20-03	3	0.3	2.5	20	2.86	65	6	3.2	21.8	22.4	23.1	24.2	26.8
ZSLNR20 30-30-03	3	0.3	2.5	30	2.86	75	6	2.4	32.6	33.5	34.5	36.2	-
ZSLNR20 30-8-05	3	0.5	2.5	8	2.86	55	6	5.8	9	9.3	9.5	9.8	10.8
ZSLNR20 30-12-05	3	0.5	2.5	12	2.86	60	6	4.6	13.1	13.5	13.9	14.6	16.2
ZSLNR20 30-16-05	3	0.5	2.5	16	2.86	60	6	3.8	17.7	18.2	18.7	19.4	21.5
ZSLNR20 30-20-05	3	0.5	2.5	20	2.86	65	6	3.2	21.8	22.4	23.1	24.2	26.8
ZSLNR20 30-30-05	3	0.5	2.5	30	2.86	75	6	2.4	32.6	33.5	34.5	36.1	-
ZSLNR20 30-35-05	3	0.5	2.5	35	2.86	80	6	2.1	37.7	38.7	40.2	42.1	-

Zamus Star  
E-Star  
U-Wing  
Zamus Thunder  
X-Star  
S-Wing  
A-Wing  
Standard  
Copper-Mate  
Gra-Mate

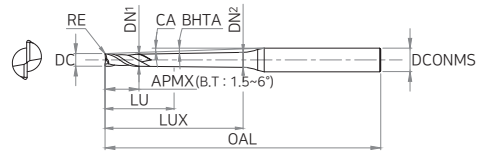
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSTNR20 2 Flutes Tapered Neck Radius End Mill

Endmill



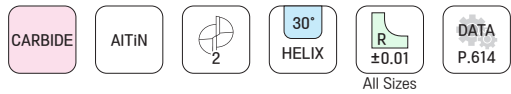
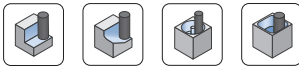
Zamus Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5

E-Star

U-Wing



Zamus Thunder

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCONMS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNR20 02-2-09005	0.2	0.05	0.15	2	0.9	0.17	0.23	50	4	1.1	10	x	2.8	3.1	3.4	3.9
ZSTNR20 04-4-09005	0.4	0.05	0.3	4	0.9	0.37	0.49	50	4	1.25	8.4	x	4.9	5.3	5.7	6.3
ZSTNR20 04-5-09005	0.4	0.05	0.3	5	0.9	0.37	0.52	50	4	1.25	7.8	x	5.9	6.4	6.8	7.5
ZSTNR20 04-4-0901	0.4	0.1	0.3	4	0.9	0.37	0.49	50	4	1.25	8.5	x	4.9	5.3	5.7	6.3
ZSTNR20 04-5-0901	0.4	0.1	0.3	5	0.9	0.37	0.52	50	4	1.25	7.9	x	5.9	6.4	6.8	7.5
ZSTNR20 05-5-0901	0.5	0.1	0.35	5	0.9	0.47	0.62	50	4	1.3	7.8	x	5.9	6.4	6.8	7.5
ZSTNR20 05-8-0901	0.5	0.1	0.35	8	0.9	0.47	0.71	50	4	1.3	6.4	x	9	9.7	10.2	11
ZSTNR20 05-10-0901	0.5	0.1	0.35	10	0.9	0.47	0.77	55	4	1.3	5.8	x	11	11.8	12.4	13.2
ZSTNR20 06-12-0901	0.6	0.1	0.4	12	0.9	0.57	0.93	55	4	1.35	5.1	x	13	13.9	14.5	15.5
ZSTNR20 06-15-0901	0.6	0.1	0.4	15	0.9	0.57	1.03	55	4	1.35	4.5	x	16.1	17.1	17.8	18.8
ZSTNR20 08-6-0402	0.8	0.2	0.5	6	0.4	0.77	0.85	50	4	2.64	7	6.6	7.1	7.5	7.8	8.3
ZSTNR20 08-12-0902	0.8	0.2	0.5	12	0.9	0.77	1.13	55	4	1.45	5	x	13	13.9	14.5	15.5
ZSTNR20 10-8-0402	1	0.2	0.8	8	0.4	0.94	1.04	55	6	5.09	7.4	8.8	9.3	9.7	10.1	10.6
ZSTNR20 10-10-0902	1	0.2	0.8	10	0.9	0.94	1.23	55	6	5.09	6.8	x	11.2	11.9	12.4	13.3
ZSTNR20 10-15-0902	1	0.2	0.8	15	0.9	0.94	1.39	60	6	2.7	5.6	x	16.3	17.2	17.8	18.8
ZSTNR20 10-20-0902	1	0.2	0.8	20	0.9	0.94	1.54	65	6	2.7	4.8	x	21.3	22.4	23.2	24.7
ZSTNR20 10-25-0902	1	0.2	0.8	25	0.9	0.94	1.7	70	6	2.7	4.1	x	26.4	27.6	28.5	30.9
ZSTNR20 10-30-0902	1	0.2	0.8	30	0.9	0.94	1.86	75	6	2.7	3.7	x	31.5	32.8	33.7	37
ZSTNR20 10-35-0902	1	0.2	0.8	35	0.9	0.94	2.02	80	6	2.7	3.3	x	36.5	38	39	43.2
ZSTNR20 10-8-0403	1	0.3	0.8	8	0.4	0.94	1.04	55	6	2.7	7.4	8.8	9.3	9.7	10	10.6

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

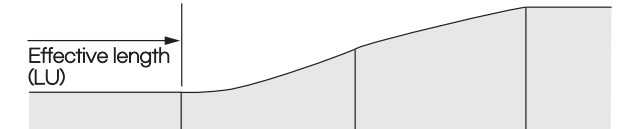
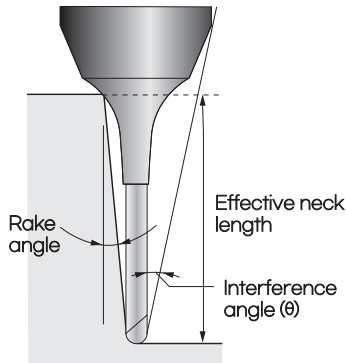
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	~325	HRC30-50	~FCD500					
◎	◎		○	○						

# ZSTNR20

## 2 Flutes Tapered Neck Radius End Mill

Endmill



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNR20 10-15-0903	1	0.3	0.8	15	0.9	0.94	1.39	60	6	2.7	5.6	x	16.3	17.2	17.8	18.8
ZSTNR20 10-25-0903	1	0.3	0.8	25	0.9	0.94	1.7	70	6	2.7	4.2	x	26.4	27.6	28.5	30.8
ZSTNR20 10-30-0903	1	0.3	0.8	30	0.9	0.94	1.86	75	6	2.7	3.7	x	31.5	32.8	33.7	37
ZSTNR20 15-10-0402	1.5	0.2	1.35	10	0.4	1.42	1.54	55	6	7.07	6.4	11	11.5	11.9	12.3	13
ZSTNR20 15-15-0902	1.5	0.2	1.35	15	0.9	1.42	1.85	60	6	7.07	5.3	x	16.4	17.3	17.9	18.9
ZSTNR20 15-20-0902	1.5	0.2	1.35	20	0.9	1.42	2.01	65	6	3.89	4.5	x	21.5	22.5	23.2	24.9
ZSTNR20 15-25-0902	1.5	0.2	1.35	25	0.9	1.42	2.16	70	6	3.89	3.9	x	26.6	27.7	28.5	31
ZSTNR20 15-30-0902	1.5	0.2	1.35	30	0.9	1.42	2.32	75	6	3.89	3.4	x	31.6	32.9	33.8	37.1
ZSTNR20 15-10-0403	1.5	0.3	1.35	10	0.4	1.42	1.54	55	6	3.89	6.4	11	11.5	11.9	12.3	13
ZSTNR20 15-20-0903	1.5	0.3	1.35	20	0.9	1.42	2.01	65	6	3.89	4.5	x	21.5	22.5	23.2	24.8
ZSTNR20 15-25-0903	1.5	0.3	1.35	25	0.9	1.42	2.16	70	6	3.89	3.9	x	26.5	27.7	28.5	31
ZSTNR20 15-30-0903	1.5	0.3	1.35	30	0.9	1.42	2.32	75	6	3.89	3.4	x	31.6	32.9	33.8	37.1
ZSTNR20 20-30-0902	2	0.2	1.7	30	0.9	1.92	2.81	70	6	7.42	3.1	x	31.6	32.9	33.8	37.2
ZSTNR20 20-40-0902	2	0.2	1.7	40	0.9	1.92	3.12	80	6	7.42	2.5	x	41.8	43.3	44.6	-
ZSTNR20 20-50-0902	2	0.2	1.7	50	0.9	1.92	3.44	90	6	7.42	2.1	x	51.9	53.6	55.7	-
ZSTNR20 20-12-0403	2	0.3	1.7	12	0.4	1.92	2.06	55	6	7.42	5.5	13	13.6	14.1	14.5	15.6
ZSTNR20 20-20-0903	2	0.3	1.7	20	0.9	1.92	2.5	65	6	4.24	4.1	x	21.5	22.5	23.2	24.9
ZSTNR20 20-30-0903	2	0.3	1.7	30	0.9	1.92	2.81	70	6	4.24	3.1	x	31.6	32.9	33.8	37.1
ZSTNR20 20-40-0903	2	0.3	1.7	40	0.9	1.92	3.12	80	6	4.24	2.5	x	41.7	43.3	44.6	-
ZSTNR20 20-50-0903	2	0.3	1.7	50	0.9	1.92	3.44	90	6	4.24	2.1	x	51.8	53.6	55.7	-

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	~325	HRc30~50	~FCD500					
◎	◎		○	○						

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZSTNR20

## 2 Flutes Tapered Neck Radius End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper -Mate

Gra -Mate

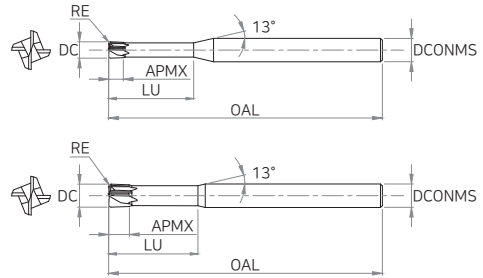
EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNR20 20-8-0405	2	0.5	1.7	8	0.4	1.92	2.01	50	6	4.24	6.8	8.7	9	9.3	9.5	10.4
ZSTNR20 20-12-0405	2	0.5	1.7	12	0.4	1.92	2.06	55	6	4.24	5.6	13	13.6	14.1	14.4	15.5
ZSTNR20 20-16-0405	2	0.5	1.7	16	0.4	1.92	2.12	60	6	4.24	4.7	17	17.8	18.3	18.7	20.7
ZSTNR20 20-20-0905	2	0.5	1.7	20	0.9	1.92	2.5	65	6	4.24	4.2	x	21.5	22.5	23.2	24.8
ZSTNR20 20-25-0905	2	0.5	1.7	25	0.9	1.92	2.65	65	6	4.24	3.6	x	26.6	27.7	28.5	30.9
ZSTNR20 20-30-0905	2	0.5	1.7	30	0.9	1.92	2.81	70	6	4.24	3.1	x	31.6	32.9	33.8	37.1
ZSTNR20 20-40-0905	2	0.5	1.7	40	0.9	1.92	3.12	80	6	4.24	2.5	x	41.7	43.2	44.6	-
ZSTNR20 20-50-0905	2	0.5	1.7	50	0.9	1.92	3.44	90	6	4.24	2.1	x	51.8	53.6	55.6	-
ZSTNR20 30-40-0902	3	0.2	2.5	40	0.9	2.86	4.04	80	6	6.95	2	x	42	43.4	-	-
ZSTNR20 30-50-0902	3	0.2	2.5	50	0.9	2.86	4.35	90	6	6.95	1.6	x	52.1	53.7	-	-
ZSTNR20 30-60-0902	3	0.2	2.5	60	0.9	2.86	4.67	100	6	6.95	1.4	x	62.2	-	-	-
ZSTNR20 30-40-0903	3	0.3	2.5	40	0.9	2.86	4.04	80	6	6.95	2	x	42	43.4	-	-
ZSTNR20 30-50-0903	3	0.3	2.5	50	0.9	2.86	4.35	90	6	6.95	1.7	x	52.1	53.7	-	-
ZSTNR20 30-60-0903	3	0.3	2.5	60	0.9	2.86	4.67	100	6	6.95	1.4	x	62.2	-	-	-
ZSTNR20 30-40-0905	3	0.5	2.5	40	0.9	2.86	4.04	80	6	6.95	2	x	42	43.4	-	-
ZSTNR20 30-50-0905	3	0.5	2.5	50	0.9	2.86	4.35	90	6	6.95	1.7	x	52.1	53.7	-	-
ZSTNR20 30-60-0905	3	0.5	2.5	60	0.9	2.86	4.67	100	6	6.95	1.4	x	62.1	-	-	-

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

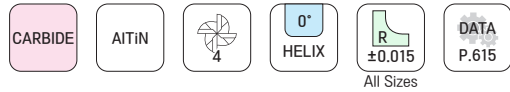
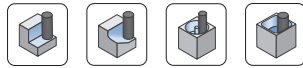
H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSPM4 4 Flutes Neck Radius End Mill For High Speed Machining



## ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



EDP No	DC	RE	APMX	LU	OAL	DCONMS
ZSPM4 030-05	3	0.5	1.2	8	50	6
ZSPM4 040-05	4	0.5	1.5	10	50	6
ZSPM4 060-05	6	0.5	2.5	12	60	6
ZSPM4 060-10	6	1	2.5	12	60	6
ZSPM4 060-15	6	1.5	2.5	12	60	6
ZSPM4 060-15L	6	1.5	2.5	12	90	6
ZSPM4 080-10	8	1	3.5	16	60	8
ZSPM4 080-20	8	2	3.5	16	60	8
ZSPM4 080-20L	8	2	3.5	16	100	8
ZSPM4 100-10	10	1	4	20	70	10
ZSPM4 100-20	10	2	4	20	70	10
ZSPM4 100-20L	10	2	4	20	100	10
ZSPM4 120-20	12	2	5	25	80	12
ZSPM4 120-30	12	3	5	25	80	12
ZSPM4 120-30L	12	3	5	25	110	12

## ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# DB702 2 Flutes Neck Ball End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

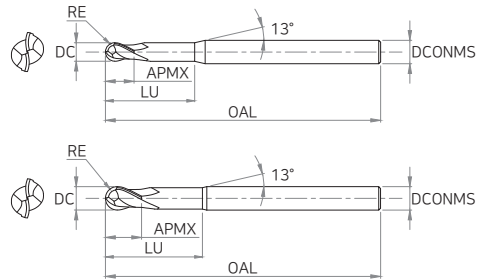
S-Wing

A-Wing

Standard

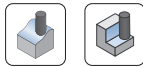
Copper-Mate

Gra-Mate



► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



CARBIDE
AITIN
2
30° HELIX
R ±0.005 R3 OR UNDER
R ±0.01 ABOVE R3
DATA P.616

EDP No	DC	RE	APMX	LU	OAL	DCON MS
DB702 001	0.1	0.05	0.15	-	40	4
DB702 002	0.2	0.1	0.3	-	40	4
DB702 003	0.3	0.15	0.5	-	40	4
DB702 004	0.4	0.2	0.6	-	40	4
DB702 005	0.5	0.25	0.7	-	40	4
DB702 006	0.6	0.3	0.9	-	40	4
DB702 007	0.7	0.35	1.1	-	40	4
DB702 008	0.8	0.4	1.2	-	40	4
DB702 009	0.9	0.45	1.4	-	40	4
DB702 010 S4	1	0.5	1.5	-	45	4
DB702 010	1	0.5	1.5	3	50	6
DB702 015 S4	1.5	0.75	2	-	45	4
DB702 015	1.5	0.75	2	4	50	6
DB702 020 S4	2	1	2.5	-	45	4
DB702 020	2	1	2.5	5	50	6
DB702 025	2.5	1.25	3	7	50	6
DB702 030S4	3	1.5	4	-	45	4

EDP No	DC	RE	APMX	LU	OAL	DCON MS
DB702 030S	3	1.5	4	10	50	6
DB702 030	3	1.5	4	10	60	6
DB702 031	3	1.5	4	10	70	6
DB702 040 S4	4	2	5	-	45	4
DB702 040 S	4	2	5	10	50	6
DB702 040	4	2	5	10	60	6
DB702 041	4	2	5	10	70	6
DB702 050	5	2.5	6	12	60	6
DB702 060	6	3	7	12	60	6
DB702 061	6	3	7	12	90	6
DB702 080	8	4	9	15	70	8
DB702 081	8	4	9	15	100	8
DB702 100	10	5	11	25	75	10
DB702 101	10	5	11	25	100	10
DB702 120	12	6	12	25	80	12
DB702 121	12	6	12	25	110	12

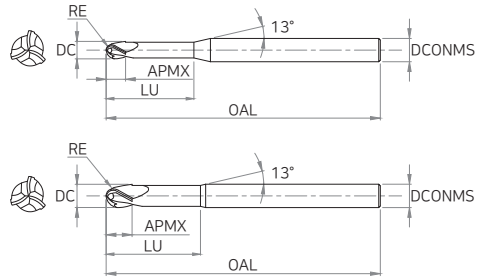
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron ~FC500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30~50						
◎	◎		○	○						

# DB703 3 Flutes Neck Ball End Mill

Endmill



Zamus Star

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5

E-Star



CARBIDE
AlTiN
3
30° HELIX
R ±0.005 R3 OR UNDER
R ±0.01 ABOVE R3
DATA P.616

U-Wing

EDP No	DC	RE	APMX	LU	OAL	DCONMS
DB703 025	2.5	1.25	3	7	50	6
DB703 030S	3	1.5	4	10	50	6
DB703 030	3	1.5	4	10	60	6
DB703 031	3	1.5	4	10	70	6
DB703 040S	4	2	5	10	50	6
DB703 040	4	2	5	10	60	6
DB703 041	4	2	5	10	70	6
DB703 050	5	2.5	6	12	60	6
DB703 060	6	3	7	12	60	6
DB703 061	6	3	7	12	90	6
DB703 080	8	4	9	15	70	8
DB703 081	8	4	9	15	100	8
DB703 100	10	5	11	25	75	10
DB703 101	10	5	11	25	100	10
DB703 120	12	6	12	25	80	12
DB703 121	12	6	12	25	110	12

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

# DB712 2 Flutes Ball End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

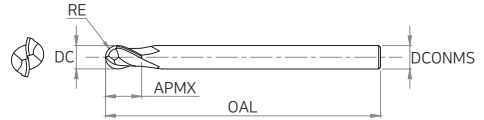
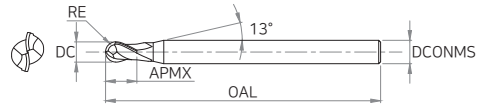
S-Wing

A-Wing

Standard

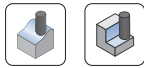
Copper -Mate

Gra -Mate



► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.02	h5



CARBIDE
AITIN
2
30° HELIX
±0.005 R3 OR UNDER
±0.01 ABOVE R3
DATA P.616

EDP No	DC	RE	APMX	OAL	DCON MS	EDP No	DC	RE	APMX	OAL	DCON MS
DB712 010S	1	0.5	1.5	40	6	DB712 030	3	1.5	8	60	6
DB712 010S4	1	0.5	2.5	50	4	DB712 040S	4	2	6	50	6
DB712 010	1	0.5	2.5	50	6	DB712 040	4	2	8	70	6
DB712 012	1.2	0.6	3	50	6	DB712 050S	5	2.5	7.5	50	6
DB712 015S	1.5	0.75	2.5	40	6	DB712 050	5	2.5	10	80	6
DB712 015S4	1.5	0.75	4	50	4	DB712 060S	6	3	9	50	6
DB712 015	1.5	0.75	4	50	6	DB712 060	6	3	12	90	6
DB712 020S	2	1	3	40	6	DB712 080S	8	4	12	50	8
DB712 020S4	2	1	5	50	4	DB712 081	8	4	14	100	8
DB712 020	2	1	5	50	6	DB712 100S	10	5	15	60	10
DB712 025	2.5	1.25	7	60	6	DB712 100	10	5	18	100	10
DB712 030S	3	1.5	4.5	50	6	DB712 120S	12	6	18	60	12
DB712 030S4	3	1.5	8	60	4	DB712 120	12	6	22	110	12

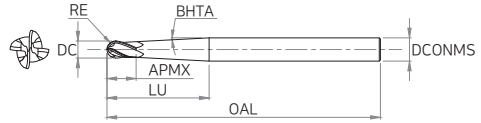
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# DB734

4Flutes 15° Helix Ball End Mill



Endmill

► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5



CARBIDE
AITIN
4
15° HELIX
R ±0.01
DATA P.617

All Sizes

EDP No	DC	RE	APMX	LU	OAL	BHTA	DCONMS
DB734 020-2.5	2	1	2	25	60	2.5	4
DB734 020-3.5	2	1	2	18	60	3.5	4
DB734 025-2.5	2.5	1.25	3	20	60	2.5	4
DB734 025-3.0	2.5	1.25	3	17	60	3	4
DB734 030-2.0	3	1.5	3	46	70	2	6
DB734 030-2.5	3	1.5	3	37	70	2.5	6
DB734 040-2.0	4	2	4	33	70	2	6
DB734 040-2.5	4	2	4	27	70	2.5	6
DB734 050-2.5	5	2.5	5	16	70	2.5	6
DB734 060-1.5	6	3	6	44	100	1.5	8
DB734 060-2.5	6	3	6	29	100	2.5	8
DB734 080-1.5	8	4	8	46	100	1.5	10
DB734 080-2.5	8	4	8	31	100	2.5	10
DB734 100-1.5	10	5	10	48	110	1.5	12
DB734 100-2.5	10	5	10	33	110	2.5	12

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

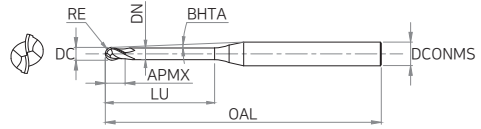
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						

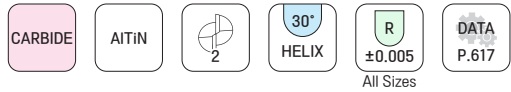
# ZSLNB20

## 2 Flutes Long Neck Ball End Mill



### ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNB20 01-0.2	0.1	0.05	0.08	0.2	0.08	45	4	11.8	0.3	0.3	0.3	0.4	0.4
ZSLNB20 01-0.3	0.1	0.05	0.08	0.3	0.08	45	4	11.7	0.4	0.4	0.5	0.5	0.5
ZSLNB20 01-0.5	0.1	0.05	0.08	0.5	0.08	45	4	11.4	0.6	0.7	0.7	0.7	0.8
ZSLNB20 02-0.5	0.2	0.1	0.15	0.5	0.17	50	4	11.5	1.2	1.3	1.5	1.6	2
ZSLNB20 02-1	0.2	0.1	0.15	1	0.17	50	4	10.9	1.7	1.9	2.1	2.3	2.7
ZSLNB20 02-1.5	0.2	0.1	0.15	1.5	0.17	50	4	10.4	2.3	2.5	2.8	3	3.4
ZSLNB20 02-2	0.2	0.1	0.15	2	0.17	50	4	9.9	2.8	3.1	3.4	3.6	4.1
ZSLNB20 02-2.5	0.2	0.1	0.15	2.5	0.17	50	4	9.5	3.4	3.7	4	4.2	4.7
ZSLNB20 02-3.0	0.2	0.1	0.15	3	0.17	50	4	9.1	3.9	4.3	4.6	4.9	5.4
ZSLNB20 03-1	0.3	0.15	0.25	1	0.27	50	4	10.9	1.7	1.9	2.1	2.3	5.4
ZSLNB20 03-1.5	0.3	0.15	0.25	1.5	0.27	50	4	10.4	2.3	2.5	2.7	3	3.4
ZSLNB20 03-2	0.3	0.15	0.25	2	0.27	50	4	9.9	2.8	3.1	3.4	3.6	4
ZSLNB20 03-2.5	0.3	0.15	0.25	2.5	0.27	50	4	9.5	3.4	3.7	4	4.2	4.7
ZSLNB20 03-3	0.3	0.15	0.25	3	0.27	50	4	9.1	3.9	4.3	4.6	4.8	5.3
ZSLNB20 04-1	0.4	0.2	0.3	1	0.37	50	4	11	1.7	1.9	2.1	2.3	2.7
ZSLNB20 04-1.5	0.4	0.2	0.3	1.5	0.37	50	4	10.4	2.3	2.5	2.7	2.9	3.4
ZSLNB20 04-2	0.4	0.2	0.3	2	0.37	50	4	9.9	2.8	3.1	3.4	3.6	4
ZSLNB20 04-2.5	0.4	0.2	0.3	2.5	0.37	50	4	9.5	3.4	3.7	4	4.2	4.7
ZSLNB20 04-3	0.4	0.2	0.3	3	0.37	50	4	9.1	3.9	4.3	4.6	4.8	5.3
ZSLNB20 04-3.5	0.4	0.2	0.3	3.5	0.37	50	4	8.7	4.5	4.8	5.2	5.4	6

### ► Applicable Working Material

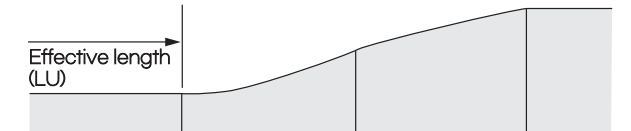
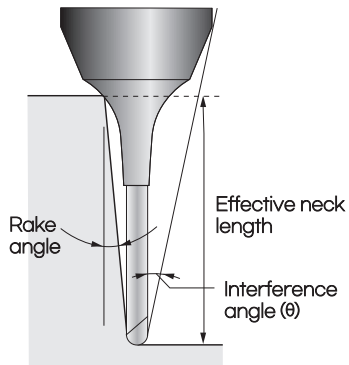
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	~325	HRC30-50	~FCD500					
◎	◎		○	○						

# ZSLNB20

## 2 Flutes Long Neck Ball End Mill

Endmill



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNB20 04-4	0.4	0.2	0.3	4	0.37	50	4	8.3	5	5.4	5.7	6	6.6
ZSLNB20 04-4.5	0.4	0.2	0.3	4.5	0.37	50	4	8	5.6	6	6.3	6.6	7.2
ZSLNB20 05-1	0.5	0.25	0.35	1	0.47	50	4	11	1.7	1.9	2.1	2.3	2.6
ZSLNB20 05-2	0.5	0.25	0.35	2	0.47	50	4	9.9	2.8	3.1	3.3	3.6	4
ZSLNB20 05-3	0.5	0.25	0.35	3	0.47	50	4	9	3.9	4.3	4.6	4.8	5.3
ZSLNB20 05-4	0.5	0.25	0.35	4	0.47	50	4	8.3	5	5.4	5.7	6	6.6
ZSLNB20 05-5	0.5	0.25	0.35	5	0.47	50	4	7.7	6.1	6.5	6.9	7.2	7.8
ZSLNB20 05-6	0.5	0.25	0.35	6	0.47	50	4	7.1	7.2	7.6	8	8.4	9
ZSLNB20 05-8	0.5	0.25	0.35	8	0.47	50	4	6.3	9.3	9.9	10.3	10.7	11.4
ZSLNB20 06-1	0.6	0.3	0.4	1	0.57	50	4	11	1.7	1.9	2.1	2.3	2.6
ZSLNB20 06-2	0.6	0.3	0.4	2	0.57	50	4	9.9	2.8	3.1	3.3	3.6	4
ZSLNB20 06-3	0.6	0.3	0.4	3	0.57	50	4	9	3.9	4.3	4.5	4.8	5.3
ZSLNB20 06-4	0.6	0.3	0.4	4	0.57	50	4	8.3	5	5.4	5.7	6	6.6
ZSLNB20 06-5	0.6	0.3	0.4	5	0.57	50	4	7.6	6.1	6.5	6.9	7.2	7.8
ZSLNB20 06-6	0.6	0.3	0.4	6	0.57	50	4	7.1	7.2	7.6	8	8.4	9
ZSLNB20 06-7	0.6	0.3	0.4	7	0.57	50	4	6.6	8.3	8.8	9.2	9.5	10.2
ZSLNB20 06-8	0.6	0.3	0.4	8	0.57	50	4	6.2	9.3	9.9	10.3	10.7	11.4
ZSLNB20 06-9	0.6	0.3	0.4	9	0.57	50	4	5.8	10.4	10.9	11.4	11.8	12.5
ZSLNB20 06-10	0.6	0.3	0.4	10	0.57	50	4	5.5	11.4	12	12.5	12.9	13.7
ZSLNB20 06-12	0.6	0.3	0.4	12	0.57	50	4	5	13.6	14.2	14.7	15.2	16

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

# ZSLNB20

## 2 Flutes Long Neck Ball End Mill

Endmill

	EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
										0.5°	1°	1.5°	2°	3°
Zamus Star	ZSLNB20 08-2	0.8	0.4	0.5	2	0.77	50	4	9.9	2.8	3.1	3.3	3.5	4
	ZSLNB20 08-4	0.8	0.4	0.5	4	0.77	50	4	8.2	5	5.4	5.7	6	6.5
	ZSLNB20 08-5	0.8	0.4	0.5	5	0.77	50	4	7.5	6.1	6.5	6.9	7.2	7.8
	ZSLNB20 08-6	0.8	0.4	0.5	6	0.77	50	4	7	7.2	7.6	8	8.4	9
	ZSLNB20 08-8	0.8	0.4	0.5	8	0.77	50	4	6.1	9.3	9.8	10.3	10.7	11.3
	ZSLNB20 08-10	0.8	0.4	0.5	10	0.77	50	4	5.4	11.4	12	12.5	12.9	13.7
E-Star	ZSLNB20 10-2	1	0.5	0.8	2	0.96	50	4	9.9	2.9	3.1	3.3	3.5	4
	ZSLNB20 10-3	1	0.5	0.8	3	0.96	50	4	8.9	4	4.3	4.5	4.8	5.3
	ZSLNB20 10-4	1	0.5	0.8	4	0.96	50	4	8.1	5	5.4	5.7	6	6.5
U-Wing	ZSLNB20 10-5	1	0.5	0.8	5	0.96	50	4	7.4	6.1	6.5	6.9	7.2	7.8
	ZSLNB20 10-6	1	0.5	0.8	6	0.96	50	4	6.8	7.2	7.7	8	8.4	9
	ZSLNB20 10-7	1	0.5	0.8	7	0.96	50	4	6.3	8.3	8.8	9.2	9.5	10.2
Zamus Thunder	ZSLNB20 10-8	1	0.5	0.8	8	0.96	50	4	5.9	9.3	9.9	10.3	10.7	11.3
	ZSLNB20 10-9	1	0.5	0.8	9	0.96	50	4	5.5	10.4	11	11.4	11.8	12.5
	ZSLNB20 10-10	1	0.5	0.8	10	0.96	50	4	5.2	11.5	12	12.5	12.9	13.7
X-Star	ZSLNB20 10-12	1	0.5	0.8	12	0.96	55	4	4.6	13.6	14.2	14.7	15.2	15.9
	ZSLNB20 10-14	1	0.5	0.8	14	0.96	55	4	4.2	15.7	16.4	16.9	17.4	18.5
	ZSLNB20 10-16	1	0.5	0.8	16	0.96	55	4	3.8	17.8	18.5	19.1	19.6	21.2
	ZSLNB20 10-18	1	0.5	0.8	18	0.96	60	4	3.5	19.9	20.7	21.3	21.8	23.8
S-Wing	ZSLNB20 10-20	1	0.5	0.8	20	0.96	60	4	3.3	22	22.8	23.4	24	26.5
	ZSLNB20 12-4	1.2	0.6	1.1	4	1.15	50	4	7.9	5.1	5.4	5.7	6	6.5
A-Wing	ZSLNB20 12-6	1.2	0.6	1.1	6	1.15	50	4	6.6	7.2	7.7	8	8.4	9
	ZSLNB20 12-8	1.2	0.6	1.1	8	1.15	50	4	5.7	9.4	9.9	10.3	10.7	11.3
	ZSLNB20 12-10	1.2	0.6	1.1	10	1.15	50	4	5	11.5	12.1	12.5	12.9	13.7
	ZSLNB20 12-12	1.2	0.6	1.1	12	1.15	55	4	4.5	13.6	14.2	14.7	15.2	15.9
Standard	ZSLNB20 14-8	1.4	0.7	1.3	8	1.34	50	4	5.5	9.4	9.9	10.3	10.7	11.3
	ZSLNB20 14-12	1.4	0.7	1.3	12	1.34	55	4	4.3	13.6	14.2	14.7	15.2	15.9
	ZSLNB20 14-16	1.4	0.7	1.3	16	1.34	55	4	3.5	17.8	18.5	19.1	19.6	21.2
Copper-Mate	ZSLNB20 15-4	1.5	0.75	1.35	4	1.44	50	4	7.7	5.1	5.4	5.7	6	6.5
	ZSLNB20 15-6	1.5	0.75	1.35	6	1.44	50	4	6.4	7.3	7.7	8	8.4	9
	ZSLNB20 15-8	1.5	0.75	1.35	8	1.44	50	4	5.4	9.4	9.9	10.3	10.7	11.3
Gra-Mate	ZSLNB20 15-10	1.5	0.75	1.35	10	1.44	50	4	4.7	11.5	12.1	12.5	12.9	13.7
	ZSLNB20 15-12	1.5	0.75	1.35	12	1.44	55	4	4.2	13.6	14.2	14.7	15.2	15.9
	ZSLNB20 15-14	1.5	0.75	1.35	14	1.44	55	4	3.8	15.7	16.4	16.9	17.4	18.5

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRC30~50	~FCD500					
◎	◎		○	○						

# ZSLNB20

## 2 Flutes Long Neck Ball End Mill

Endmill

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNB20 15-16	1.5	0.75	1.35	16	1.44	55	4	3.4	17.8	18.5	19.1	19.6	21.1
ZSLNB20 15-20	1.5	0.75	1.35	20	1.44	60	4	2.9	22	22.8	23.4	24	-
ZSLNB20 16-8	1.6	0.8	1.4	8	1.54	50	4	5.3	9.4	9.9	10.3	10.7	11.3
ZSLNB20 16-10	1.6	0.8	1.4	10	1.54	50	4	4.6	11.5	12.1	12.5	12.9	13.7
ZSLNB20 16-12	1.6	0.8	1.4	12	1.54	55	4	4.1	13.6	14.2	14.7	15.2	15.9
ZSLNB20 16-16	1.6	0.8	1.4	16	1.54	55	4	3.3	17.8	18.5	19.1	19.6	21.1
ZSLNB20 16-20	1.6	0.8	1.4	20	1.54	60	4	2.8	22	22.8	23.4	24	-
ZSLNB20 18-8	1.8	0.9	1.6	8	1.73	50	4	5.1	9.4	9.9	10.3	10.7	11.3
ZSLNB20 18-12	1.8	0.9	1.6	12	1.73	55	4	3.9	13.7	14.3	14.7	15.2	15.9
ZSLNB20 18-16	1.8	0.9	1.6	16	1.73	55	4	3.1	17.9	18.6	19.1	19.6	21.1
ZSLNB20 18-20	1.8	0.9	1.6	20	1.73	60	4	2.6	22	22.8	23.4	24	-
ZSLNB20 20-3	2	1	1.7	3	1.92	50	4	8.3	4.1	4.4	4.6	4.8	5.2
ZSLNB20 20-4	2	1	3	4	1.92	50	4	7.3	5.2	5.5	5.8	6	6.5
ZSLNB20 20-6	2	1	3	6	1.92	50	4	5.8	7.3	7.7	8.1	8.4	9
ZSLNB20 20-8	2	1	3	8	1.92	50	4	4.9	9.5	9.9	10.3	10.7	11.3
ZSLNB20 20-10	2	1	3	10	1.92	50	4	4.2	11.6	12.1	12.6	12.9	13.6
ZSLNB20 20-12	2	1	3	12	1.92	55	4	3.7	13.7	14.3	14.8	15.2	15.9
ZSLNB20 20-14	2	1	3	14	1.92	55	4	3.2	15.8	16.4	16.9	17.4	18.5
ZSLNB20 20-16	2	1	3	16	1.92	55	4	2.9	17.9	18.6	19.1	19.6	-
ZSLNB20 20-18	2	1	3	18	1.92	60	4	2.7	20	20.7	21.3	21.8	-
ZSLNB20 20-20	2	1	3	20	1.92	60	4	2.4	22.1	22.8	23.4	24	-
ZSLNB20 20-22	2	1	3	22	1.92	60	4	2.3	24.1	24.9	25.6	26.3	-
ZSLNB20 20-25	2	1	3	25	1.92	65	4	2	27.3	28.1	28.8	-	-
ZSLNB20 20-30	2	1	3	30	1.92	70	4	1.7	32.4	33.4	34.2	-	-
ZSLNB20 20-35	2	1	3	35	1.92	75	4	1.5	37.6	38.6	-	-	-
ZSLNB20 20-40	2	1	3	40	1.92	80	4	1.4	42.8	43.8	-	-	-
ZSLNB20 25-10	2.5	1.25	4	10	2.4	50	4	3.4	11.6	12.1	12.6	13	13.6
ZSLNB20 25-16	2.5	1.25	4	16	2.4	55	4	2.3	17.9	18.6	19.1	19.6	-
ZSLNB20 25-20	2.5	1.25	4	20	2.4	60	4	1.9	22.1	22.8	23.5	-	-
ZSLNB20 30-8	3	1.5	4	8	2.88	55	6	6.2	9.6	10	10.4	10.7	11.3
ZSLNB20 30-10	3	1.5	4	10	2.88	55	6	5.5	11.7	12.2	12.6	13	13.6
ZSLNB20 30-13	3	1.5	4	13	2.88	60	6	4.6	14.8	15.4	15.9	16.3	17.1
ZSLNB20 30-16	3	1.5	4	16	2.88	60	6	4	18	18.6	19.1	19.6	21.1
ZSLNB20 30-18	3	1.5	4	18	2.88	60	6	3.6	20	20.7	21.3	21.8	23.7

Zamus Star  
E-Star  
U-Wing  
Zamus Thunder  
X-Star  
S-Wing  
A-Wing  
Standard  
Copper-Mate  
Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	Steel HRc30~50	~FCD500					
◎	◎		○	○						

# ZSLNB20

## 2 Flutes Long Neck Ball End Mill

Endmill

EDP No	DC	RE	APMX	LU	DN	OAL	DCON MS	BHTA	Effective length by inclination angle				
									0.5°	1°	1.5°	2°	3°
ZSLNB20 30-20	3	1.5	4	20	2.88	65	6	3.4	22.1	22.9	23.5	24	26.4
ZSLNB20 30-25	3	1.5	4	25	2.88	70	6	2.8	27.3	28.2	28.8	29.9	-
ZSLNB20 30-30	3	1.5	4	30	2.88	75	6	2.5	32.5	33.4	34.3	35.9	-
ZSLNB20 30-35	3	1.5	4	35	2.88	80	6	2.2	37.7	38.7	40	41.9	-
ZSLNB20 40-10	4	2	5	10	3.9	55	6	4.5	11.6	12.1	12.5	12.9	13.5
ZSLNB20 40-13	4	2	5	13	3.9	60	6	3.6	14.7	15.3	15.8	16.2	17
ZSLNB20 40-16	4	2	5	16	3.9	60	6	3.1	17.9	18.5	19.1	19.5	20.9
ZSLNB20 40-20	4	2	5	20	3.9	65	6	2.5	22.1	22.8	23.4	23.9	-
ZSLNB20 40-25	4	2	5	25	3.9	70	6	2.1	27.3	28.1	28.8	29.8	-
ZSLNB20 40-30	4	2	5	30	3.9	75	6	1.8	32.4	33.4	34.2	-	-
ZSLNB20 40-35	4	2	5	35	3.9	80	6	1.6	37.6	38.6	39.9	-	-
ZSLNB20 40-40	4	2	5	40	3.9	80	6	1.4	42.8	43.8	-	-	-
ZSLNB20 40-45	4	2	5	45	3.9	90	6	1.2	47.9	49.1	-	-	-
ZSLNB20 40-50	4	2	5	50	3.9	100	6	1.1	53.1	54.5	-	-	-
ZSLNB20 50-20	5	2.5	6	20	4.9	65	6	1.4	22	22.8	-	-	-
ZSLNB20 50-25	5	2.5	6	25	4.9	70	6	1.2	27.2	28.1	-	-	-
ZSLNB20 50-30	5	2.5	6	30	4.9	75	6	1	32.4	-	-	-	-
ZSLNB20 50-35	5	2.5	6	35	4.9	80	6	0.8	42.8	-	-	-	-
ZSLNB20 50-40	5	2.5	6	40	4.9	90	6	0.7	42.8	-	-	-	-

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper -Mate

Gra -Mate

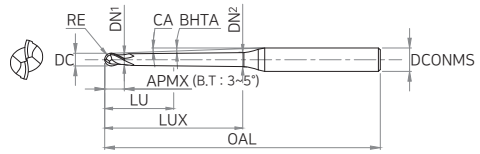
### ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSTNB20

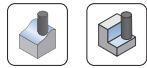
## 2 Flutes Tapered Neck Ball End Mill



\* R2 and below are not back draft Type

### ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 2002-1-04	0.2	0.1	0.15	1	0.4	0.17	0.18	50	4	1.35	10.9	1.5	1.7	1.8	2	2.3
ZSTNB 2002-1.5-04	0.2	0.1	0.15	1.5	0.4	0.17	0.19	50	4	1.77	10.4	2	2.2	2.4	2.6	2.9
ZSTNB 2002-2-09	0.2	0.1	0.15	2	0.9	0.17	0.23	50	4	1.1	10.1	x	2.8	3.1	3.4	3.9
ZSTNB 2002-2.5-09	0.2	0.1	0.15	2.5	0.9	0.17	0.24	50	4	1.1	9.6	x	3.3	3.7	4	4.5
ZSTNB 2003-2-04	0.3	0.15	0.25	2	0.4	0.27	0.29	50	4	2.19	10	2.5	2.8	3	3.2	3.5
ZSTNB 2003-3-09	0.3	0.15	0.25	3	0.9	0.27	0.36	50	4	1.2	9.3	x	3.8	4.2	4.5	5.1
ZSTNB 2003-4-09	0.3	0.15	0.25	4	0.9	0.27	0.39	50	4	1.2	8.6	x	4.8	5.3	5.7	6.3
ZSTNB 2004-2-04	0.4	0.2	0.3	2	0.4	0.37	0.39	50	4	2.2	10	2.5	2.8	3	3.2	3.5
ZSTNB 2004-3-04	0.4	0.2	0.3	3	0.4	0.37	0.41	50	4	2.44	9.1	3.6	3.9	4.1	4.4	4.8
ZSTNB 2004-4-04	0.4	0.2	0.3	4	0.4	0.37	0.42	50	4	2.44	8.4	4.7	5.2	5.6	5.9	6.5
ZSTNB 2004-4-09	0.4	0.2	0.3	4	0.9	0.37	0.49	50	4	1.25	8.5	x	4.8	5.3	5.7	6.3
ZSTNB 2004-5-04	0.4	0.2	0.3	5	0.4	0.37	0.44	50	4	2.44	7.8	5.7	6.3	6.7	7.1	7.7
ZSTNB 2004-5-09	0.4	0.2	0.3	5	0.9	0.37	0.52	50	4	1.25	7.9	x	5.9	6.4	6.8	7.5
ZSTNB 2005-4-04	0.5	0.25	0.35	4	0.4	0.47	0.52	50	4	2.49	8.4	4.6	5	5.3	5.5	5.9
ZSTNB 2005-8-09	0.5	0.25	0.35	8	0.9	0.47	0.71	50	4	1.3	6.5	x	8.9	9.6	10.1	10.9
ZSTNB 2005-12-09	0.5	0.25	0.35	12	0.9	0.47	0.84	50	4	1.3	5.3	x	13	13.9	14.5	15.4
ZSTNB 20054-2-04	0.54	0.27	0.37	2	0.4	0.51	0.53	50	4	1.8	10	2.3	2.5	2.7	2.8	3
ZSTNB 20054-4-04	0.54	0.27	0.37	4	0.4	0.51	0.56	50	4	1.8	8.4	4.5	4.9	5.2	5.5	5.9
ZSTNB 20054-5-04	0.54	0.27	0.37	5	0.4	0.51	0.58	50	4	1.8	7.8	5.5	6	6.3	6.6	7.1
ZSTNB 20054-6-04	0.54	0.27	0.37	6	0.4	0.51	0.59	50	4	1.8	7.2	6.7	7.3	7.8	8.2	8.8

### ► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSTNB20

## 2 Flutes Tapered Neck Ball End Mill

Endmill

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

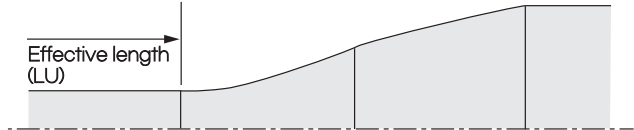
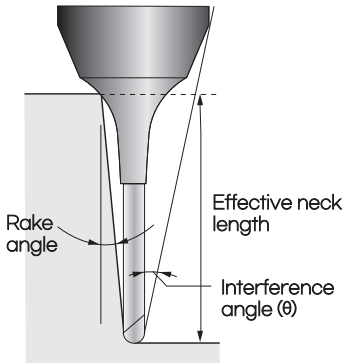
S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 20054-6.5-04	0.54	0.27	0.37	6.5	0.4	0.51	0.6	50	4	1.8	7	7.2	7.9	8.3	8.7	9.4
ZSTNB 20054-7-04	0.54	0.27	0.37	7	0.4	0.51	0.6	50	4	1.8	6.8	7.7	8.4	8.9	9.3	10
ZSTNB 2006-2-04	0.6	0.3	0.4	2	0.4	0.57	0.59	50	4	2.17	10	2.4	2.5	2.7	2.8	3
ZSTNB 2006-4-04	0.6	0.3	0.4	4	0.4	0.57	0.62	50	4	2.54	8.4	4.6	5	5.2	5.5	5.9
ZSTNB 2006-6-04	0.6	0.3	0.4	6	0.4	0.57	0.65	50	4	2.54	7.2	6.8	7.4	7.8	8.2	8.8
ZSTNB 2006-6-09	0.6	0.3	0.4	6	0.9	0.57	0.75	50	4	1.35	7.3	x	6.9	7.5	7.9	8.6
ZSTNB 2006-8-09	0.6	0.3	0.4	8	0.9	0.57	0.81	50	4	1.35	6.4	x	8.9	9.6	10.1	10.9
ZSTNB 2006-10-04	0.6	0.3	0.4	10	0.4	0.57	0.7	50	4	2.54	5.6	10.8	11.7	12.2	12.7	13.5
ZSTNB 2006-10-09	0.6	0.3	0.4	10	0.9	0.57	0.87	50	4	1.35	5.7	x	11	11.8	12.3	13.2
ZSTNB 2006-12-09	0.6	0.3	0.4	12	0.9	0.57	0.93	55	4	1.35	5.2	x	13	13.9	14.5	15.4
ZSTNB 2006-15-04	0.6	0.3	0.4	15	0.4	0.57	0.77	55	4	2.54	4.4	15.9	17	17.6	18.2	19.2
ZSTNB 2006-15-09	0.6	0.3	0.4	15	0.9	0.57	1.03	55	4	1.35	4.5	x	16.1	17.1	17.7	18.8
ZSTNB 2008-4-04	0.8	0.4	0.5	4	0.4	0.77	0.82	50	4	2.64	8.3	4.6	4.9	5.2	5.5	5.9
ZSTNB 2008-6-04	0.8	0.4	0.5	6	0.4	0.77	0.85	50	4	2.64	7.1	6.6	7.1	7.5	7.7	8.3
ZSTNB 2008-8-09	0.8	0.4	0.5	8	0.9	0.77	1.01	50	4	1.45	6.3	x	8.9	9.6	10.1	10.9
ZSTNB 2008-12-09	0.8	0.4	0.5	12	0.9	0.77	1.13	55	4	1.45	5	x	13	13.9	14.5	15.4
ZSTNB 2008-16-09	0.8	0.4	0.5	16	0.9	0.77	1.26	55	4	1.45	4.2	x	17.1	18.1	18.8	19.9
ZSTNB 2009-4-04	0.9	0.45	0.6	4	0.4	0.86	0.91	50	4	3.46	8.2	4.5	4.7	4.9	5.1	5.4
ZSTNB 2009-8-04	0.9	0.45	0.6	8	0.4	0.86	0.96	55	4	3.46	6.1	8.7	9.3	9.7	10	10.6
ZSTNB 2009-12-04	0.9	0.45	0.6	12	0.4	0.86	1.02	55	4	3.46	4.8	12.9	13.8	14.4	14.9	15.7

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRC30-50	Cast Iron ~FCD500					
◎	◎		○	○						

# ZSTNB20

## 2 Flutes Tapered Neck Ball End Mill

Endmill

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 2009-16-04	0.9	0.45	0.6	16	0.4	0.86	1.08	60	4	3.46	4	17	18	18.7	19.3	20.5
ZSTNB 2009-18-04	0.9	0.45	0.6	18	0.4	0.86	1.1	65	4	3.46	3.7	19.1	20.1	20.9	21.5	23.1
ZSTNB 2009-20-04	0.9	0.45	0.6	20	0.4	0.86	1.13	65	4	3.46	3.4	21.1	22.2	23	23.6	25.6
ZSTNB 2009-22-04	0.9	0.45	0.6	22	0.4	0.86	1.16	65	4	3.46	3.2	23.1	24.3	25.1	25.8	28.2
ZSTNB 2009-24-04	0.9	0.45	0.6	24	0.4	0.86	1.19	70	4	3.46	3	25.2	26.4	27.2	27.9	-
ZSTNB 2010-6-04	1	0.5	0.8	6	0.4	0.94	1.01	50	6	5.09	8.3	6.8	7.2	7.5	7.8	8.3
ZSTNB 2010-8-04	1	0.5	0.8	8	0.4	0.94	1.04	55	6	5.09	7.5	8.8	9.3	9.7	10	10.6
ZSTNB 2010-10-04	1	0.5	0.8	10	0.4	0.94	1.07	55	6	5.09	6.8	11	11.7	12.3	12.7	13.5
ZSTNB 2010-10-09	1	0.5	0.8	10	0.9	0.94	1.23	55	6	2.7	6.9	x	11.2	11.9	12.4	13.2
ZSTNB 2010-15-09	1	0.5	0.8	15	0.9	0.94	1.39	60	6	2.7	5.7	x	16.2	17.1	17.8	18.8
ZSTNB 2010-20-04	1	0.5	0.8	20	0.4	0.94	1.21	65	6	5.09	4.7	21.2	22.3	23	23.6	25.7
ZSTNB 2010-20-09	1	0.5	0.8	20	0.4	0.94	1.54	65	6	2.7	4.8	x	21.3	22.4	23.1	24.6
ZSTNB 2010-25-09	1	0.5	0.8	25	0.4	0.94	1.7	70	6	2.7	4.2	x	26.4	27.6	28.4	30.8
ZSTNB 2010-30-04	1	0.5	0.8	30	0.4	0.94	1.35	75	6	5.09	3.6	31.3	32.7	33.6	34.8	38.5
ZSTNB 2010-30-09	1	0.5	0.8	30	0.9	0.94	1.86	75	6	2.7	3.7	x	31.4	32.8	33.7	36.9
ZSTNB 2010-35-09	1	0.5	0.8	35	0.9	0.94	2.02	80	6	2.7	3.3	x	36.5	38	39	43.1
ZSTNB 2010-40-09	1	0.5	0.8	40	0.9	0.94	2.17	85	6	2.7	3	x	41.6	43.2	44.4	-
ZSTNB 2010-50-09	1	0.5	0.8	50	0.9	0.94	2.49	95	6	2.7	2.5	x	51.7	53.5	55.5	-
ZSTNB 2010-60-09	1	0.5	0.8	60	0.9	0.94	2.8	105	6	2.7	2.2	x	61.8	63.8	66.6	-
ZSTNB 2010-70-09	1	0.5	0.8	70	0.9	0.94	3.11	115	6	2.7	1.9	x	71.9	74	-	-
ZSTNB 2015-8-04	1.5	0.75	1.35	8	0.4	1.42	1.51	55	6	7.07	7.3	8.9	9.4	9.7	10	10.6
ZSTNB 2015-10-04	1.5	0.75	1.35	10	0.4	1.42	1.54	55	6	7.07	6.6	10.9	11.5	11.9	12.2	12.9
ZSTNB 2015-12-04	1.5	0.75	1.35	12	0.4	1.42	1.57	55	6	7.07	6	13	13.6	14	14.4	15.4
ZSTNB 2015-15-09	1.5	0.75	1.35	15	0.9	1.42	1.85	60	6	3.89	5.4	x	16.4	17.2	17.8	18.8
ZSTNB 2015-20-09	1.5	0.75	1.35	20	0.9	1.42	2.01	65	6	3.89	4.5	x	21.4	22.4	23.2	24.7
ZSTNB 2015-30-09	1.5	0.75	1.35	30	0.9	1.42	2.32	75	6	3.89	3.4	x	31.5	32.9	33.7	37
ZSTNB 2018-4-04	1.8	0.9	1.6	4	0.4	1.73	1.76	50	6	4.38	9.2	4.6	4.8	4.9	5.1	5.4
ZSTNB 2018-8-04	1.8	0.9	1.6	8	0.4	1.73	1.82	50	6	6.61	7.1	8.6	9	9.2	9.4	10.2
ZSTNB 2018-12-04	1.8	0.9	1.6	12	0.4	1.73	1.88	55	6	6.61	5.8	12.9	13.5	14	14.4	15.4
ZSTNB 2018-16-04	1.8	0.9	1.6	16	0.4	1.73	1.93	60	6	6.61	4.9	17	17.7	18.3	18.7	20.5
ZSTNB 2018-20-04	1.8	0.9	1.6	20	0.4	1.73	1.99	65	6	6.61	4.3	21.2	22.3	23	23.6	25.6
ZSTNB 2018-24-04	1.8	0.9	1.6	24	0.4	1.73	2.04	65	6	6.61	3.8	25.3	26.5	27.3	27.9	30.8
ZSTNB 2018-28-04	1.8	0.9	1.6	28	0.4	1.73	2.1	70	6	6.61	3.4	29.4	30.6	31.5	32.4	35.9
ZSTNB 2018-32-04	1.8	0.9	1.6	32	0.4	1.73	2.15	70	6	6.61	3	33.4	34.8	35.7	37.1	-

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSTNB20

## 2 Flutes Tapered Neck Ball End Mill

Endmill

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 2018-36-04	1.8	0.9	1.6	36	0.4	1.73	2.21	75	6	6.61	2.8	37.5	38.9	39.9	41.7	-
ZSTNB 2018-38-04	1.8	0.9	1.6	38	0.4	1.73	2.24	80	6	6.61	2.7	39.5	41	42	44	-
ZSTNB 2018-40-04	1.8	0.9	1.6	40	0.4	1.73	2.27	80	6	6.61	2.6	41.5	43.1	44.2	46.3	-
ZSTNB 2020-8-04	2	1	1.7	8	0.4	1.92	2.01	50	6	7.42	7	8.7	9	9.2	9.5	10.2
ZSTNB 2020-12-04	2	1	1.7	12	0.4	1.92	2.06	55	6	7.42	5.7	13	13.6	14	14.4	15.4
ZSTNB 2020-16-04	2	1	1.7	16	0.4	1.92	2.12	60	6	7.42	4.8	17	17.7	18.3	18.7	20.5
ZSTNB 2020-20-04	2	1	1.7	20	0.4	1.92	2.18	65	6	7.42	4.1	21.3	22.3	23	23.6	25.6
ZSTNB 2020-20-09	2	1	1.7	20	0.9	1.92	2.5	65	6	4.24	4.2	x	21.4	22.4	23.2	24.6
ZSTNB 2020-25-09	2	1	1.7	25	0.9	1.92	2.65	65	6	4.24	3.6	x	26.5	27.7	28.5	30.8
ZSTNB 2020-30-04	2	1	1.7	30	0.4	1.92	2.32	70	6	7.42	3.1	31.4	32.7	33.6	34.8	38.5
ZSTNB 2020-30-09	2	1	1.7	30	0.9	1.92	2.81	70	6	4.24	3.2	x	31.6	32.9	33.7	36.9
ZSTNB 2020-35-09	2	1	1.7	35	0.9	1.92	2.97	75	6	4.24	2.8	x	36.6	38	39	-
ZSTNB 2020-40-04	2	1	1.7	40	0.4	1.92	2.46	80	6	7.42	2.5	41.5	43.1	44.2	46.3	-
ZSTNB 2020-40-09	2	1	1.7	40	0.9	1.92	3.12	80	6	4.24	2.6	x	41.7	43.2	44.5	-
ZSTNB 2020-50-09	2	1	1.7	50	0.9	1.92	3.44	90	6	4.24	2.1	x	51.5	53.5	55.5	-
ZSTNB 2020-60-09	2	1	1.7	60	0.9	1.92	3.75	100	6	4.24	1.8	x	61.9	63.8	-	-
ZSTNB 2020-70-09	2	1	1.7	70	0.9	1.92	4.07	110	6	4.24	1.8	x	72	74.1	-	-
ZSTNB 2030-8-04	3	1.5	2.5	8	0.4	2.86	2.94	50	6	8.5	6.3	8.8	9.1	9.3	9.5	10.3
ZSTNB 2030-16-04	3	1.5	2.5	16	0.4	2.86	3.05	55	6	12.52	4.1	17.2	17.8	18.3	18.7	20.6
ZSTNB 2030-20-04	3	1.5	2.5	20	0.4	2.86	3.1	60	6	12.52	3.4	21.2	22	22.6	23.3	25.7
ZSTNB 2030-30-04	3	1.5	2.5	30	0.4	2.86	3.24	70	6	12.52	2.5	31.6	32.8	33.7	34.9	-
ZSTNB 2030-30-09	3	1.5	2.5	30	0.9	2.86	3.72	70	6	6.95	2.6	x	31.8	33	33.8	-
ZSTNB 2030-40-04	3	1.5	2.5	40	0.4	2.86	3.38	80	6	12.52	2	41.7	43.2	44.3	-	-
ZSTNB 2030-40-09	3	1.5	2.5	40	0.9	2.86	4.04	80	6	6.95	2	x	41.9	43.3	-	-
ZSTNB 2030-50-09	3	1.5	2.5	50	0.9	2.86	4.35	90	6	6.95	1.7	x	52	53.6	-	-
ZSTNB 2030-60-09	3	1.5	2.5	60	0.9	2.86	4.67	100	6	6.95	1.4	x	62.1	-	-	-
ZSTNB 2030-70-09	3	1.5	2.5	70	0.9	2.86	4.98	110	6	6.95	1.2	x	72.1	-	-	-
ZSTNB 2040-20-10	4	2	8	20	1	3.86	4.28	70	8	12.01	5	20.5	21.6	22.3	22.8	23.5
ZSTNB 2040-30-10	4	2	8	30	1	3.86	4.63	80	8	12.01	3.51	22	31.6	32.5	33.2	34.16
ZSTNB 2040-40-10	4	2	8	40	1	3.86	4.98	90	8	12.01	2.7	22	42	43.4	44.3	-
ZSTNB 2040-50-10	4	2	8	50	1	3.86	5.33	100	8	12.01	2.2	22	52	53.6	54.7	-
ZSTNB 2040-60-10	4	2	8	60	1	3.86	5.68	110	8	12.01	1.9	22	62	63.8	-	-
ZSTNB 2050-30-10	5	2.5	10	30	1	4.86	5.56	80	8	14.01	2.8	25.5	31.7	32.6	33.2	-
ZSTNB 2050-40-10	5	2.5	10	40	1	4.86	5.91	90	8	14.01	2.1	25.5	41.7	42.8	43.5	-

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	~HB225	~325	HRC30~50						
◎	◎		○	○						

# ZSTNB20

## 2 Flutes Tapered Neck Ball End Mill

Endmill

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 2050-60-10	5	2.5	10	60	1	4.86	6.61	110	8	14.01	1.5	25.5	62.1	-	-	-
ZSTNB 2060-30-10	6	3	12	30	1	5.86	6.49	80	8	16.01	1.9	29	31.8	32.6	-	-
ZSTNB 2060-40-10	6	3	12	40	1	5.86	6.84	90	8	16.01	1.5	29	41.8	-	-	-
ZSTNB 2060-50-10	6	3	12	50	1	5.86	7.19	100	8	16.01	1.2	29	51.8	-	-	-
ZSTNB 2060-60-10	6	3	12	60	1	5.86	7.54	110	10	16.01	1.9	29	62.2	63.9	-	-
ZSTNB 2060-70-10	6	3	12	70	1	5.86	7.89	120	10	16.01	1.7	29	72.2	74.1	-	-
ZSTNB 2060-80-10	6	3	12	80	1	5.86	8.23	130	10	16.01	1.5	29	82.2	-	-	-
ZSTNB 2080-50-10	8	4	14	50	1	7.86	9.12	110	10	18.01	1.2	32	51.9	-	-	-
ZSTNB 2080-60-10	8	4	14	60	1	7.86	9.47	120	10	18.01	1	32	-	-	-	-
ZSTNB 2080-70-10	8	4	14	70	1	7.86	9.82	130	10	18.01	0.9	32	-	-	-	-
ZSTNB 2080-80-10	8	4	14	80	1	7.86	10.16	140	12	18.01	1.5	32	82.3	-	-	-
ZSTNB 2100-60-10	10	5	18	60	1	9.86	11.33	130	12	22.01	1.1	39	62.1	-	-	-
ZSTNB 2100-75-10	10	5	18	75	1	9.86	11.85	140	12	22.01	0.9	39	-	-	-	-

- Zamus Star
- E-Star
- U-Wing
- Zamus Thunder
- X-Star
- S-Wing
- A-Wing
- Standard
- Copper-Mate
- Gra-Mate

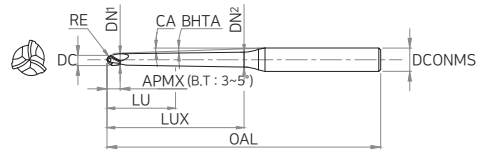
► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	~HB225	HB225 ~325	HRc30~50	~FCD500					
◎	◎		○	○						

# ZSTNB30

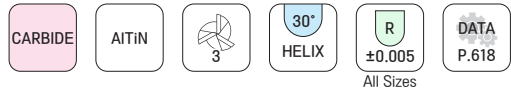
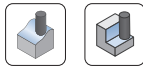
## 3 Flutes Tapered Neck Ball End Mill



\* R2 and below are not back draft Type

### ► Tolerance

DC		Shank Dia
All Sizes	0 ~ -0.015	h5



EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCONMS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 3020-8-04	2	1	1.7	8	0.4	1.92	2.01	50	6	7.42	7	8.7	9	9.2	9.5	10.2
ZSTNB 3020-12-04	2	1	1.7	12	0.4	1.92	2.06	55	6	7.42	5.7	13	13.6	14	14.4	15.4
ZSTNB 3020-16-04	2	1	1.7	16	0.4	1.92	2.12	60	6	7.42	4.8	17	17.7	18.3	18.7	20.5
ZSTNB 3020-20-04	2	1	1.7	20	0.4	1.92	2.18	65	6	7.42	4.1	21.3	22.3	23	23.6	25.6
ZSTNB 3020-20-09	2	1	1.7	20	0.9	1.92	2.5	65	6	4.24	4.2	x	21.4	22.4	23.2	24.6
ZSTNB 3020-25-09	2	1	1.7	25	0.9	1.92	2.65	65	6	4.24	3.6	x	26.5	27.7	28.5	30.8
ZSTNB 3020-30-04	2	1	1.7	30	0.4	1.92	2.32	70	6	7.42	3.1	31.4	32.7	33.6	34.8	38.5
ZSTNB 3020-30-09	2	1	1.7	30	0.9	1.92	2.81	70	6	4.24	3.2	x	31.6	32.9	33.7	36.9
ZSTNB 3020-35-09	2	1	1.7	35	0.9	1.92	2.97	75	6	4.24	2.8	x	36.6	38	39	-
ZSTNB 3020-40-04	2	1	1.7	40	0.4	1.92	2.46	80	6	7.42	2.5	41.5	43.1	44.2	46.3	-
ZSTNB 3020-40-09	2	1	1.7	40	0.9	1.92	3.12	80	6	4.24	2.6	x	41.7	43.2	44.5	-
ZSTNB 3020-50-09	2	1	1.7	50	0.9	1.92	3.44	90	6	4.24	2.1	x	51.8	53.5	55.5	-
ZSTNB 3020-60-09	2	1	1.7	60	0.9	1.92	3.75	100	6	4.24	1.8	x	61.9	63.8	-	-
ZSTNB 3020-70-09	2	1	1.7	70	0.9	1.92	4.07	110	6	4.24	1.6	x	72	74.1	-	-
ZSTNB 3030-8-04	3	1.5	2.5	8	0.4	2.86	2.94	50	6	8.5	6.3	8.8	9.1	9.3	9.5	10.3
ZSTNB 3030-16-04	3	1.5	2.5	16	0.4	2.86	3.05	55	6	12.52	4.1	17.2	17.8	18.3	18.7	20.6
ZSTNB 3030-20-04	3	1.5	2.5	20	0.4	2.86	3.1	60	6	12.52	3.4	21.2	22	22.6	23.3	25.7
ZSTNB 3030-30-04	3	1.5	2.5	30	0.4	2.86	3.24	70	6	12.52	2.5	31.6	32.8	33.7	34.9	-
ZSTNB 3030-30-09	3	1.5	2.5	30	0.9	2.86	3.72	70	6	6.95	2.6	x	31.8	33	33.8	-
ZSTNB 3030-40-04	3	1.5	2.5	40	0.4	2.86	3.38	80	6	12.52	2	41.7	43.2	44.3	-	-

### ► Applicable Working Material

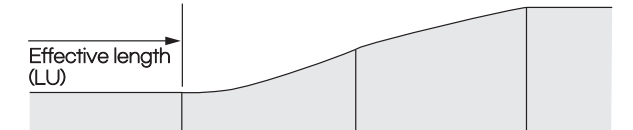
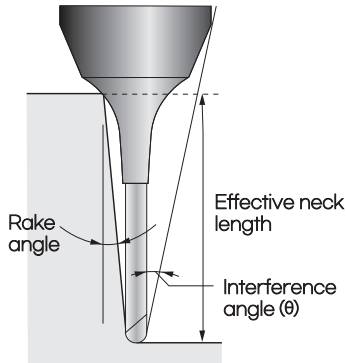
○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRC55	SKD11 HRC55~	Steel ~HB225	Alloy Steel ~325	Prehardened Steel HRC30~50						
◎	◎		○	○						

# ZSTNB30

## 3 Flutes Tapered Neck Ball End Mill

Endmill



※ The marked effective neck length is the default value to prevent interference with the workpiece.

EDP No	DC	RE	APMX	LUX	CA	DN <sup>1</sup>	DN <sup>2</sup>	OAL	DCON MS	LU	BHTA	Effective length by inclination angle				
												0.5°	1°	1.5°	2°	3°
ZSTNB 3030-40-09	3	1.5	2.5	40	0.9	2.86	4.04	80	6	6.95	2	x	41.9	43.3	-	-
ZSTNB 3030-50-09	3	1.5	2.5	50	0.9	2.86	4.35	90	6	6.95	1.7	x	52	53.6	-	-
ZSTNB 3030-60-09	3	1.5	2.5	60	0.9	2.86	4.67	100	6	6.95	1.4	x	62.1	-	-	-
ZSTNB 3030-70-09	3	1.5	2.5	70	0.9	2.86	4.98	110	6	6.95	1.2	x	72.1	-	-	-
ZSTNB 3040-20-10	4	2	8	20	1	3.86	4.28	70	8	12.01	5	20.5	21.6	22.3	22.8	23.5
ZSTNB 3040-30-10	4	2	8	30	1	3.86	4.63	80	8	12.01	3.6	22	31.6	32.5	33.2	34.1
ZSTNB 3040-40-10	4	2	8	40	1	3.86	4.98	90	8	12.01	2.7	22	42	43.4	44.3	-
ZSTNB 3040-50-10	4	2	8	50	1	3.86	5.33	100	8	12.01	2.2	22	52	53.6	54.7	-
ZSTNB 3040-60-10	4	2	8	60	1	3.86	5.68	110	8	12.01	1.9	22	62	63.8	-	-
ZSTNB 3050-30-10	5	2.5	10	30	1	4.86	5.56	80	8	14.01	2.8	25.5	31.7	32.6	33.2	-
ZSTNB 3050-40-10	5	2.5	10	40	1	4.86	5.91	90	8	14.01	2.1	25.5	41.7	42.8	43.5	-
ZSTNB 3050-60-10	5	2.5	10	60	1	4.86	6.61	110	8	12.52	1.5	25.5	62.1	-	-	-

Zamus Star

E-Star

U-Wing

Zamus Thunder

X-Star

S-Wing

A-Wing

Standard

Copper-Mate

Gra-Mate

► Applicable Working Material

○ : GOOD ◎ : EXCELLENT

H		P			K	N			M	S
Hardened Steel		Carbon Steel	Alloy Steel	Prehardened Steel	Cast Iron	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
SKD61 ~HRc55	SKD11 HRc55~	Carbon Steel ~HB225	Alloy Steel HB225 ~325	Prehardened Steel HRc30~50	Cast Iron ~FCD500	Copper	Graphite	Aluminum	Stainless Steel	Heat Resistant Alloy
◎	◎		○	○						