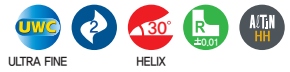
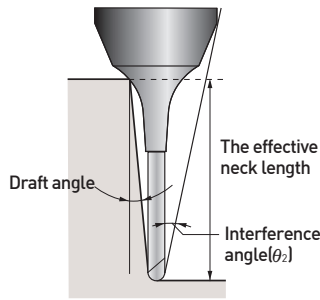


The effective neck length shown is not an exact value and to avoid contact with the workpiece, we recommend the user control the precise value of this length.

## ZSLNR..... series

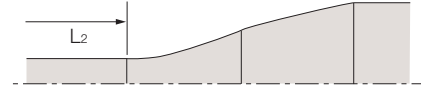


EDP. No.	Dimension(mm)							Effective Neck Length					STOCK	
	D	R	L <sub>2</sub>	L <sub>1</sub>	d <sub>1</sub>	L <sub>3</sub>	d <sub>3</sub>	θ	0.5°	1°	1.5°	2°		3°
ZSLNR2002-0.5-005	0.2	0.05	0.5	0.15	0.17	50	4	11.4	0.9	1.0	1.0	1.1	1.2	•
ZSLNR2002-1-005			1						1.6	1.7	1.9	2.0	2.3	•
ZSLNR2002-1.5-005			1.5						2.1	2.3	2.5	2.7	3.0	•
ZSLNR2002-2-005			2						2.8	3.1	3.4	3.6	4.1	•
ZSLNR2003-1-005	0.3	0.05	1	0.25	0.27	50	4	10.8	1.4	1.5	1.6	1.7	1.9	•
ZSLNR2003-1.5-005			1.5						2.1	2.3	2.5	2.7	3.0	•
ZSLNR2003-2-005			2						2.7	2.9	3.1	3.3	3.6	•
ZSLNR2003-2.5-005			2.5						3.2	3.5	3.7	3.9	4.3	•
ZSLNR2003-3-005			3						3.9	4.3	4.6	4.9	5.4	•
ZSLNR2004-1-005	0.4	0.05	1	0.3	0.37	50	4	10.8	1.4	1.5	1.6	1.7	1.9	•
ZSLNR2004-1.5-005			1.5						2.0	2.1	2.2	2.3	2.5	•
ZSLNR2004-2-005			2						2.7	2.9	3.1	3.3	3.6	•
ZSLNR2004-2.5-005			2.5						3.2	3.5	3.7	3.9	4.3	•
ZSLNR2004-3-005			3						3.8	4.0	4.3	4.5	4.9	•
ZSLNR2004-3.5-005			3.5						4.3	4.6	4.9	5.1	5.5	•
ZSLNR2004-4-005		4	5.0	5.4	5.8	6.1	6.6	•						
ZSLNR2004-2-01		0.1	2	0.3	0.37	50	4	9.8	2.7	2.9	3.1	3.3	3.6	•
ZSLNR2004-3-01			3						3.8	4.0	4.3	4.5	4.9	•
ZSLNR2004-4-01			4						5.0	5.4	5.8	6.1	6.6	•
ZSLNR2005-1-005	0.5		0.05						1	0.35	0.47	50	4	10.8
ZSLNR2005-2-005		2		2.5	2.6	2.8	2.9	3.1	•					
ZSLNR2005-3-005		3		3.8	4.0	4.3	4.5	4.9	•					
ZSLNR2005-4-005		4		4.8	5.2	5.4	5.7	6.1	•					
ZSLNR2005-5-005		5		6.1	6.6	6.9	7.3	7.8	•					
ZSLNR2005-6-005		6		7.0	7.2	7.7	8.1	8.4	9.0					
ZSLNR2005-1-01		0.1	1	0.35	0.47	50	4	10.8	1.4	1.5	1.6	1.7	1.9	•
ZSLNR2005-2-01			2						2.5	2.6	2.8	2.9	3.1	•
ZSLNR2005-3-01			3						3.8	4.0	4.3	4.5	4.9	•



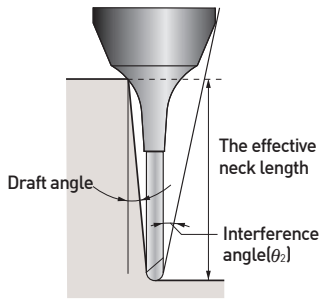
### 2 FLUTE, LONG NECK BACK DRAFT TYPE

- If the workpiece has draft angle, the interference length will be longer than the  $L_2$ .
- Please refer to the effective neck length for the various draft angles.
- In addition, the angle at which the tool will interfere with the workpiece is shown as the "interference angle  $\theta_2$ ", and should also be referred to.



※The effective neck length shown is not an exact value and to avoid contact with the workpiece, we recommend the user control the precise value of this length.

EDP. No.	Dimension(mm)								Effective Neck Length					STOCK
	D	R	L <sub>2</sub>	L <sub>1</sub>	d <sub>1</sub>	L <sub>3</sub>	d <sub>3</sub>	$\theta$	0.5°	1°	1.5°	2°	3°	
ZSLNR2005-4-01	0.5	0.1	4	0.35	0.47	50	4	8.2	4.8	5.2	5.4	5.7	6.1	•
ZSLNR2005-5-01			5					7.6	6.1	6.5	6.9	7.2	7.8	•
ZSLNR2005-6-01			6					7.1	7.2	7.7	8.1	8.4	9.0	•
ZSLNR2006-2-01	0.6	0.1	2	0.4	0.57	50	4	9.7	2.5	2.6	2.8	2.9	3.1	•
ZSLNR2006-4-01			4					8.1	4.8	5.2	5.4	5.7	6.1	•
ZSLNR2006-6-01			6					7.0	7.2	7.7	8.1	8.4	9.0	•
ZSLNR2006-8-01			8					6.1	9.3	9.9	10.3	10.7	11.4	•
ZSLNR2006-10-01			10					5.5	11.5	12.1	12.5	13.0	13.7	•
ZSLNR2008-4-01	0.8	0.1	4	0.5	0.77	50	4	8.0	4.8	5.2	5.4	5.7	6.1	•
ZSLNR2008-6-01			6					6.8	7.0	7.4	7.7	7.9	8.4	•
ZSLNR2008-8-01			8					5.9	9.3	9.9	10.3	10.7	11.4	•
ZSLNR2008-12-01		12	4.7			13.6		14.2	14.7	15.2	16.0	•		
ZSLNR2008-4-02		0.2	4			50		8.0	4.8	5.1	5.4	5.6	6.1	•
ZSLNR2008-6-02			6					6.9	7.0	7.3	7.7	7.9	8.4	•
ZSLNR2010-4-01	1	0.1	4	0.8	0.94	50	4	7.7	4.7	4.9	5.1	5.2	5.5	•
ZSLNR2010-6-01			6					6.6	7.1	7.4	7.7	8.0	8.5	•
ZSLNR2010-8-01			8					5.7	9.2	9.6	9.9	10.2	10.8	•
ZSLNR2010-10-01			10					5.1	11.6	12.1	12.6	13.0	13.7	•
ZSLNR2010-12-01			12					4.5	13.7	14.3	14.8	15.3	16.0	•
ZSLNR2010-16-01			16					3.8	17.9	18.6	19.2	19.7	21.3	•
ZSLNR2010-20-01		20	3.2			22.0		22.8	23.5	24.0	26.7	•		
ZSLNR2010-4-02		0.2	4			50		7.8	4.7	4.9	5.1	5.2	5.5	•
ZSLNR2010-6-02			6					6.6	7.1	7.4	7.7	8.0	8.5	•
ZSLNR2010-8-02			8					5.8	9.2	9.6	9.9	10.2	10.8	•
ZSLNR2010-10-02			10					5.1	11.6	12.1	12.6	13.0	13.7	•
ZSLNR2010-12-02			12					4.6	13.7	14.3	14.8	15.2	16.0	•
ZSLNR2010-16-02	16		3.8	17.9	18.6		19.2	19.7	21.3	•				
ZSLNR2010-20-02	20	3.2	22.0	22.8	23.5	24.0	26.6	•						



## 2 FLUTE, LONG NECK BACK DRAFT TYPE

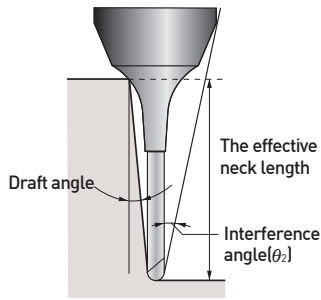
- If the workpiece has draft angle, the interference length will be longer than the  $L_2$ .
- Please refer to the effective neck length for the various draft angles.
- In addition, the angle at which the tool will interfere with the workpiece is shown as the "interference angle  $\theta_z$ ", and should also be referred to.



※The effective neck length shown is not an exact value and to avoid contact with the workpiece, we recommend the user control the precise value of this length.

EDP. No.	Dimension(mm)								Effective Neck Length					STOCK			
	D	R	L <sub>2</sub>	L <sub>1</sub>	d <sub>1</sub>	L <sub>3</sub>	d <sub>3</sub>	$\theta$	0.5°	1°	1.5°	2°	3°				
ZSLNR2010-6-03	1	0.3	6	0.8	0.94	50	4	6.7	7.1	7.4	7.7	8.0	8.4	•			
ZSLNR2010-10-03			10					5.1	11.5	12.1	12.6	13.0	13.7	•			
ZSLNR2010-16-03			16			3.8		17.9	18.6	19.1	19.6	21.3	•				
ZSLNR2010-20-03			20			3.2		22.0	22.8	23.5	24.0	26.6	•				
ZSLNR2015-4-01	1.5	0.1	4	1.35	1.42	50	4	7.2	4.8	4.9	5.1	5.3	5.5	•			
ZSLNR2015-8-01			8					5.2	9.2	9.6	10.0	10.3	10.8	•			
ZSLNR2015-12-01			12			4.0		13.4	13.9	14.3	14.7	16.1	•				
ZSLNR2015-15-01			15			3.5		16.9	17.6	18.1	18.6	20.1	•				
ZSLNR2015-20-01		20	2.8			22.1		22.9	23.5	24.1	-	•					
ZSLNR2015-4-02		0.2	4			1.35		1.42	50	4	7.3	4.7	4.9	5.1	5.3	5.5	•
ZSLNR2015-8-02			8								5.2	9.2	9.6	10.0	10.3	10.8	•
ZSLNR2015-12-02			12						4.1		13.4	13.9	14.3	14.7	16.1	•	
ZSLNR2015-15-02			15						3.5		16.9	17.5	18.1	18.6	20.0	•	
ZSLNR2015-20-02		20	2.8			22.1		22.9	23.5	24.1	-	•					
ZSLNR2015-8-03		0.3	8			1.35		1.42	50	4	5.2	9.2	9.6	10.0	10.3	10.8	•
ZSLNR2015-15-03			15								3.5	16.9	17.5	18.1	18.6	20.0	•
ZSLNR2015-20-03	20		2.8	22.1	22.9		23.5		24.0		-	•					
ZSLNR2020-6-02	2		0.2	6	1.7		1.92		50		4	5.4	6.8	7.1	7.3	7.5	8.1
ZSLNR2020-8-02		8		4.6		8.9		9.2		9.4		9.7	10.8	•			
ZSLNR2020-12-02		12		3.5		13.4		13.9	14.3	14.7		16.1	•				
ZSLNR2020-16-02		16		2.8		17.6		18.1	18.6	19.3		-	•				
ZSLNR2020-20-02		20		2.4		22.1		22.9	23.5	24.1		-	•				
ZSLNR2020-25-02		25		2.0		27.3		28.2	28.8	-		-	•				
ZSLNR2020-30-02		30	1.7	32.5		33.4		34.4	-	-		•					
ZSLNR2020-8-03		0.3	8	1.7		1.92		50	4	4.6		8.9	9.2	9.4	9.7	10.7	•
ZSLNR2020-16-03			16							2.8		17.6	18.1	18.6	19.3	-	•
ZSLNR2020-20-03			20					2.4		22.1		22.9	23.5	24.0	-	•	
ZSLNR2020-6-05			0.5					6		1.7		1.92	50	4	5.5	6.8	7.1
ZSLNR2020-8-05		8		4.7		8.9		9.2	9.4						9.6	10.7	•

- No interference



### 2 FLUTE, LONG NECK BACK DRAFT TYPE

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- Please refer to the effective neck length for the various draft angles.
- In addition, the angle at which the tool will interfere with the workpiece is shown as the "interference angle  $\theta_2$ ", and should also be referred to.



※The effective neck length shown is not an exact value and to avoid contact with the workpiece, we recommend the user control the precise value of this length.

EDP. No.	Dimension(mm)								Effective Neck Length					STOCK	
	D	R	L <sub>2</sub>	L <sub>1</sub>	d <sub>1</sub>	L <sub>3</sub>	d <sub>3</sub>	$\theta$	0.5°	1°	1.5°	2°	3°		
ZSLNR2020-12-05	2	0.5	12	1.7	1.92	55	4	3.5	13.4	13.9	14.3	14.6	16.0	•	
ZSLNR2020-16-05			16					2.9	17.6	18.1	18.6	19.2	-	•	
ZSLNR2020-20-05			20					2.4	22.1	22.9	23.5	24.0	-	•	
ZSLNR2020-25-05			25					2.0	27.3	28.1	28.8	-	-	•	
ZSLNR2020-30-05		30	1.7			32.5		33.4	34.3	-	-	•			
ZSLNR2020-8-08		0.8	8			50		4.8	8.9	9.2	9.4	9.6	10.6	•	
ZSLNR2020-16-08			16			55		2.9	17.6	18.1	18.6	19.2	-	•	
ZSLNR2020-20-08			20			60		2.4	22.1	22.8	23.5	24.0	-	•	
ZSLNR2030-8-02	3		0.2	8	2.5	2.86	55	6	5.7	9.0	9.3	9.5	9.9	10.9	•
ZSLNR2030-12-02		12		60					4.5	13.1	13.5	14.0	14.7	16.2	•
ZSLNR2030-16-02		16		65					3.8	17.7	18.2	18.7	19.5	21.6	•
ZSLNR2030-20-02		20		75					3.2	21.8	22.4	23.1	24.2	26.9	•
ZSLNR2030-30-02		30		80					2.4	32.6	33.5	34.5	36.2	-	•
ZSLNR2030-35-02		35		80					2.1	37.7	38.7	40.2	42.2	-	•
ZSLNR2030-8-03		0.3	8	55			5.7		9.0	9.3	9.5	9.9	10.9	•	
ZSLNR2030-16-03			16	60			3.8		17.7	18.2	18.7	19.4	21.5	•	
ZSLNR2030-20-03			20	65			3.2		21.8	22.4	23.1	24.2	26.8	•	
ZSLNR2030-30-03			30	75			2.4		32.6	33.5	34.5	36.2	-	•	
ZSLNR2030-8-05		0.5	8	55			5.8		9.0	9.3	9.5	9.8	10.8	•	
ZSLNR2030-12-05			12	60			4.6		13.1	13.5	13.9	14.6	16.2	•	
ZSLNR2030-16-05			16	65			3.8		17.7	18.2	18.7	19.4	21.5	•	
ZSLNR2030-20-05			20	75			3.2		21.8	22.4	23.1	24.2	26.8	•	
ZSLNR2030-30-05			30	80			2.4		32.6	33.5	34.5	36.1	-	•	
ZSLNR2030-35-05			35	80			2.1		37.7	38.7	40.2	42.1	-	•	

— No interference

■ Tolerance

Mill Dia. (mm)	Shank Dia.
0 ~ -0,015	h5

※Items can be changed for quality improvement without notice.