

SPECIALTY END MILLS



# CONICAL™

TAPERED LEFT HAND SPIRAL



AMERICAN  
MADE

GLOBALLY  
RENOWNED

SPECIALTY END MILLS  
FOR FINISHING DRAFT ANGLES ON THROUGH HOLES





# CONICAL™

TAPERED LEFT HAND SPIRAL

## FOR FINISHING DRAFT ANGLES

ON INTERNAL DIAMETER THROUGH HOLES

### FEATURES & BENEFITS

The square end option completes finishing operations, while creating crisp clean corners. Premium high speed steel improves rigidity, hardness and wear resistance in easy to machine materials. Tool life is always an important consideration and adding a coating will ensure the tool lasts longer, but we will let you decide if it's necessary for your specific operation and material. That way you take an active part in your savings and once again our success relies on yours.

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CONICAL™  
CUTTING TOOLS

# SERIES: LHX

For finish milling of draft angles on internal diameter through holes in most materials; wet or dry; from easy to difficult machinability materials.

**Square end option to create sharp corners in finishing operations**

**Multi-flute, three and four flute design allows for proper chip evacuation through a variety of materials and creates stability, minimizing harmonics while tapering walls in through-hole operations**

**Cylindrical land for excellent surface finishes**

**Uncoated for versatility. More than 16 available coatings can be added to increase tool life for your specific application and material**

**Premium high speed steel improves rigidity, hardness and wear resistance for milling of easy to machine materials**

**Variable Core Design maximizes chip evacuation and provides increased rigidity when the cutter is fully engaged**

**UNC**

**HSS HIGH SPEED STEEL**

## TIP & END



## SHANK & LENGTH



## FLUTE CONFIGURATION



## MATERIAL



## COATING



## RESULTS

The Conical Left Hand Spiral Tapered end mill demonstrates our ingenuity by making possible the impossible. The tool pushes material through the cutting hole, thus eliminating the natural "screwing" action and the necessity for continuous pecking, while creating a

superior finish. The left hand spiral recreates the shearing action that would normally be present when profiling, allowing the tool to cut rather than grab. Contact us today, to find out what we mean by "innovation to succeed".

**Series LHX:** High Speed Steel, 3 & 4 Flute; 12° Left Hand Slow Helix, Right Hand Cut

**Subseries:** LH1XD, LH02D LH03D, LH05D, LH07D

**Configuration:** Varying Angles; Varying Diameters; Regular & Long Lengths;

12° Left Hand Slow Helix, Right Hand Cut; Cylindrical Land; No End Cut

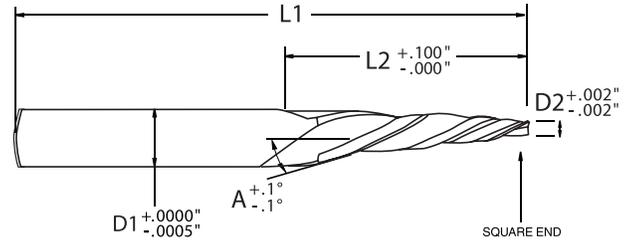
# CONICAL TAPERED LEFT HAND SPIRAL

SERIES LHX - HIGH SPEED STEEL, 3 & 4 FLUTE, 12° LEFT HAND SLOW HELIX

## QUALITY, VALUE AND DURABILITY

We apply years of experience to create end mills of the highest quality, value and durability. The Conical Left Hand Spiral Tapered end mill is engineered for difficult tapered hole machining.

- Square end option to create sharp corners in finishing operations
- Multi-flute, three and four flute design allows for proper chip evacuation through a variety of materials and creates stability, minimizing harmonics while tapering walls in through-hole operations
- Cylindrical land for excellent surface finishes



TIP & END	SHANK & LENGTH	FLUTE CONFIGURATION	MATERIAL	COATING

## SERIES LH1XD - 1 1/2 DEGREE, 3 & 4 FLUTE, REGULAR LENGTH

ANGLE PER SIDE (A)	TIP DIAMETER (D2)		LARGE DIAMETER	SHANK DIAMETER (D1)		FLUTE LENGTH (L2)		OVERALL LENGTH (L1)		# OF FLUTES	SQUARE END	
									PART #		EDP #	
1.5°	1/8	0.125	0.204	3/8	0.375	1 1/2	1.500	3 3/4	3.750	3	LAAX-206	3Z015
	3/16	0.188				2	2.000	4 3/8	4.375		4	LAAX-308

## SERIES LH02D - 2 DEGREE, 3 & 4 FLUTE, REGULAR LENGTH

ANGLE PER SIDE (A)	TIP DIAMETER (D2)		LARGE DIAMETER	SHANK DIAMETER (D1)		FLUTE LENGTH (L2)		OVERALL LENGTH (L1)		# OF FLUTES	SQUARE END	
									PART #		EDP #	
2.0°	3/32	0.094	0.199	3/8	0.375	1 1/2	1.500	3 3/4	3.750	3	LB-106	3B015
	1/8	0.125				2	2.000	4 1/4	4.250		3	LB-208
	3/16	0.188				2	2.000	4 3/8	4.375	4	LB-308	3B035

## SERIES LH03D - 3 DEGREE, 3 & 4 FLUTE, LONG LENGTH

ANGLE PER SIDE (A)	TIP DIAMETER (D2)		LARGE DIAMETER	SHANK DIAMETER (D1)		FLUTE LENGTH (L2)		OVERALL LENGTH (L1)		# OF FLUTES	SQUARE END	
									PART #		EDP #	
3.0°	3/32	0.094	0.199	3/8	0.375	1	1.000	3 1/4	3.250	3	LC-104	3C015
						1 1/2	1.500	3 3/4	3.750		LC-106	3C025
			1			1.000	3 1/4	3.250	LC-204		3C035	
			1 1/2			1.500	3 3/4	3.750	LC-206		3C045	
			2			2.000	4 1/4	4.250	LC-208		3C055	
			2 1/2			2.500	5	5.000	LC-210		3C065	
	1/8	0.125	0.251	1/2	0.500	3	3.000	5 3/4	5.750	4	LC-212	3C075
						1 1/2	1.500	3 3/4	3.750		LC-306	3C085
			2	2.000		4 1/4	4.250	LC-306	3C085			
			2 1/2	2.500		5	5.000	LC-306	3C085			
			3	3.000		5 3/4	5.750	LC-306	3C085			
			4	4.000		7	7.000	LC-306	3C085			
3/16	0.188	0.230	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		
1/4	0.250	0.282	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		
1/4	0.250	0.387	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		
1/4	0.250	0.439	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		
1/4	0.250	0.607	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		
1/4	0.250	0.669	5/8	0.625	1 1/2	1.500	3 3/4	3.750	4	LC-306	3C085	
					1 1/2	1.500	3 3/4	3.750		LC-306	3C085	
		2			2.000	4 1/4	4.250	LC-306		3C085		
		2 1/2			2.500	5	5.000	LC-306		3C085		
		3			3.000	5 3/4	5.750	LC-306		3C085		
		4			4.000	7	7.000	LC-306		3C085		

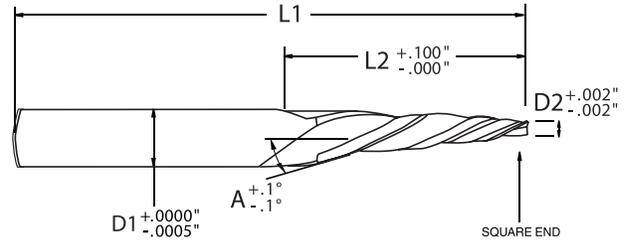
# CONICAL TAPERED LEFT HAND SPIRAL

SERIES LHX - HIGH SPEED STEEL, 3 & 4 FLUTE, 12° LEFT HAND SLOW HELIX

## SUPERIOR FINISHES

The tool pushes material through the cutting hole, thus eliminating the natural “screwing” action and the necessity for continuous pecking, while creating a superior finish.

- Variable Core Design maximizes chip evacuation and provides increased rigidity when the cutter is fully engaged
- Uncoated for versatility. More than 16 available coatings can be added to increase tool life for your specific application and material
- Premium high speed steel improves rigidity, hardness and wear resistance for milling of easy to machine materials



TIP & END	SHANK & LENGTH	FLUTE CONFIGURATION	MATERIAL	COATING

## SERIES LH05D - 5 DEGREE, VARYING LENGTHS

ANGLE PER SIDE (A)	TIP DIAMETER (D2)		LARGE DIAMETER	SHANK DIAMETER (D1)		FLUTE LENGTH (L2)		OVERALL LENGTH (L1)		# OF FLUTES	SQUARE END	
											PART #	EDP #
5.0°	3/32	0.094	0.269	3/8	0.375	1	1.000	3 1/4	3 1/4	3	LE-104	3E01S
			0.356			1 1/2	1.500	3 3/4	3.750		LE-106	3E02S
			0.444			2	2.000	4 1/4	4.250		LE-108	3E03S
	1/8	0.125	0.300	3/8	0.375	1	1.000	3 1/4	3.250		LE-204	3E04S
			0.387			1 1/2	1.500	3 3/4	3.750		LE-206	3E05S
			0.475			2	2.000	4 1/4	4.250		LE-208	3E06S
	3/16	0.188	0.562	1/2	0.500	2 1/2	2.500	5	5.000		LE-210	3E07S
			0.650			3	3.000	5 3/4	5.750		LE-212	3E08S
			0.450			1 1/2	1.500	3 3/4	3.750		LE-306	3E09S
	1/4	0.250	0.537	1/2	0.500	2	2.000	4 3/8	4.375		LE-308	3E10S
			0.512			1 1/2	1.500	4	4.000		LE-406	3E11S
			0.644			2 1/4	2.250	5 1/4	5.250		LE-409	3E12S
		0.950	3/4	0.750	4	4.000	7	7.000	LE-416	3E13S		

⊙ indicates center hole in tip

## SERIES LH07D - 7 DEGREE, 3 & 4 FLUTE, LONG LENGTH

ANGLE PER SIDE (A)	TIP DIAMETER (D2)		LARGE DIAMETER	SHANK DIAMETER (D1)		FLUTE LENGTH (L2)		OVERALL LENGTH (L1)		# OF FLUTES	SQUARE END	
											PART #	EDP #
7.0°	3/32	0.094	0.339	3/8	0.375	1	1.000	3 1/4	3.250	3	LG-104	3G01S
	1/8	0.125	0.493	1/2	0.500	1 1/2	1.500	3 3/4	3.750		LG-205	3G02S
	3/16	0.188	0.679			2	2.000	4 3/8	4.375		4	LG-308