

# *AVe Type ENDMILLS*



*Application Guide*



*Extended Range Group*  
LOVEJOY TOOL COMPANY, Inc.

## *AVe Type*

The AVe Type end mill family is the newest addition to the Extended Range Group of milling products developed and manufactured by the *LOVEJOY TOOL COMPANY* of Springfield, Vermont. In the tradition of all Extended Range products, the AVe Type end mills have been designed to accommodate high velocity applications on a wide variety of machine tool types. In particular, this unique family of small diameter tools is well suited for many tasks performed on the new generation of light duty machine tools developed by such manufacturers as Fadal, Hass and Bridgeport. Furthermore, the AVe end mill has proven to be a versatile addition in the tool room environment (small manual mills).

## *Extended Range Group*

The speed and feed parameters contained in this guide are a compilation of results based on vigorously controlled conditions. Therefore, these recommendations do not contain variable adjustments for unforeseen conditions such as unfavorable tool extensions, unusual part configurations, compromised setups etc. As is the case in all machining applications, a reasonable amount of common sense must be employed to ensure safety and optimum performance. For further information regarding the application of AVe Type end mills, please contact: *LOVEJOY Technical Services* at 1-800-843-8376.

*LOVEJOY TOOL CO., Inc.*  
*133 Main Street*  
*Springfield, Vermont 05156*

HIGH VELOCITY



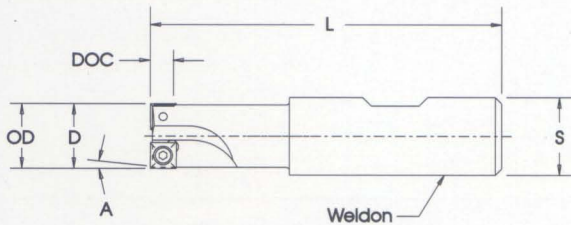
- One Insert Size Covers Entire Range
- Unique Dish Insert Geometry
- Simple Insert Locking System
- Rigid Length to Diameter Ratio
- Available In Miniature .375" Diameter
- Now Available in a more rigid stub length

205 - APPLICATION RANGE				
High Velocity	Light Duty	General Purpose	Moderate Roughing	Heavy Metal Removal

205 - WORKPIECE MATERIALS						
Aluminum	Cast Iron	Mild Steel	Alloyed Steel	Stainless Steel	Titanium	Nickel Based

## Ave Type ENDMILLS 205 Series


AEROSPACE  
DESIGN



- Engineered for *HIGH VELOCITY* and light duty machine tools



Insert Lock Screw Wrench 1557-TX08

Hardware Specifications	
Locking Screw	
Tool Designation	Screw Number
205E0037A/BSM2-W050R	3605-0001-0027
All Other 205 Series	3605-0001-0025

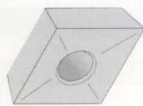
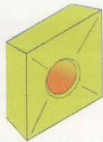
### Ave-90 - 205 SERIES DIMENSIONAL SPECIFICATIONS

Order Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
205E0037ASM2-W050R	0.375	0.375	0.500	3.00	90°	0.150	SPEX-221	1	0.50
205E0037BSM2-W050R	0.375	0.375	0.500	2.50	90°	0.150	SPEX-221	1	0.50
205E0043ASM2-W050R	0.437	0.437	0.500	3.00	90°	0.150	SPEX-221	1	0.50
205E0043BSM2-W050R	0.437	0.437	0.500	2.50	90°	0.150	SPEX-221	1	0.50
205E0050ASM2-W050R	0.500	0.500	0.500	3.00	90°	0.150	SPEX-221	1	0.50
205E0050BSM2-W050R	0.500	0.500	0.500	2.50	90°	0.150	SPEX-221	1	0.50
205E0062ASM2-W062R	0.625	0.625	0.625	3.00	90°	0.150	SPEX-221	2	0.55
205E0075ASM2-W075R	0.750	0.750	0.750	3.00	90°	0.150	SPEX-221	3	0.62
205E0100ASM2-W075R	1.000	1.000	0.750	3.00	90°	0.150	SPEX-221	4	0.75

# AVe Type

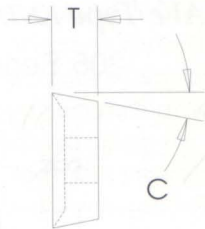
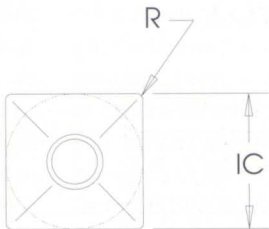
# Extended Range Group

## SPEX Type



**AEROSPACE  
DESIGN**

**NEW PRODUCT**



Insert Number	IC	T	R	C	COATED GRADES		UNCOATED GRADES	
					586XRm	606jRm	LTC-14	LTC-10
SPEX-221	0.250	0.125	0.015	11°	•	•	•	•
SPEX-222	0.250	0.125	0.032	11°	•	•	•	•

ISO	ANSI	PRIMARY	SUPPLEMENTAL
P01	C8	<b>606jRm</b>	<b>LTC-14</b>
P05	C8		
P10	C7		
P15	C7		
P20	C6		
P25	C6		
P30	C5		
P40	C5		
P50	-		
M10	-	<b>586XRm</b>	<b>LTC-14</b>
M20	-		
M30	-		
M40	-		
K01	C4	<b>586XRm</b>	<b>LTC-10</b>
K05	C4		
K10	C3		
K20	C2		
K30	C1		
K40	C1		

*AVE Type INSERTS*



# Ave Type

# Extended Range Group

MACHINING PARAMETERS: Aluminum 2024, 6061, 7072 etc.											
Primary Insert: SPEX-221 Grade 586XRm					Secondary Insert: SPEX-221 Grade LTC-10						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	700-4000	1000	10187	.003-.010	0.003	30.6	0.150	0.375	1.72	0.43
205E0043ASM2 205E0043BSM2	0.437	700-4000	1000	8741	.003-.010	0.004	35.0	0.150	0.437	2.29	0.57
205E0050ASM2 205E0050BSM2	0.500	700-4000	1000	7640	.003-.010	0.004	30.6	0.150	0.500	2.29	0.57
205E0062ASM2	0.625	700-4000	1000	6112	.003-.010	0.004	48.9	0.150	0.625	4.58	1.15
205E0075ASM2	0.750	700-4000	1000	5093	.003-.010	0.004	61.1	0.150	0.750	6.88	1.72
205E0100ASM2	1.000	700-4000	1000	3820	.003-.010	0.005	76.4	0.150	1.000	11.46	2.87

MACHINING PARAMETERS: Class 25-35 Grey cast iron											
Primary Insert: SPEX-221 Grade 586XRm					Secondary Insert: SPEX-221 Grade LTC-10						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	800-4000	1000	10187	.003-.012	0.003	30.6	0.100	0.375	1.15	0.46
205E0043ASM2 205E0043BSM2	0.437	800-4000	1000	8741	.003-.012	0.004	35.0	0.100	0.437	1.53	0.61
205E0050ASM2 205E0050BSM2	0.500	800-4000	1000	7640	.003-.012	0.004	30.6	0.100	0.500	1.53	0.61
205E0062ASM2	0.625	800-4000	1000	6112	.003-.012	0.004	48.9	0.100	0.625	3.06	1.22
205E0075ASM2	0.750	800-4000	1000	5093	.003-.012	0.004	61.1	0.100	0.750	4.58	1.83
205E0100ASM2	1.000	800-4000	1000	3820	.003-.012	0.004	61.1	0.100	1.000	6.11	2.44

MACHINING PARAMETERS: PH Type Stainless Steel 17-4, 15-5, 13-8 etc.											
Primary Insert: SPEX-221 Grade 606jRm					Secondary Insert: SPEX-221 Grade LTC-14						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	500-1100	550	5603	.003-.010	0.003	16.8	0.100	0.375	0.63	0.69
205E0043ASM2 205E0043BSM2	0.437	500-1100	550	4808	.003-.010	0.004	19.2	0.100	0.437	0.84	0.92
205E0050ASM2 205E0050BSM2	0.500	500-1100	550	4202	.003-.010	0.004	16.8	0.100	0.500	0.84	0.92
205E0062ASM2	0.625	500-1100	550	3362	.003-.010	0.004	26.9	0.100	0.625	1.68	1.85
205E0075ASM2	0.750	500-1100	550	2801	.003-.010	0.004	33.6	0.100	0.750	2.52	2.77
205E0100ASM2	1.000	500-1100	550	2101	.003-.010	0.004	33.6	0.100	1.000	3.36	3.70

# Ave Type

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MACHINING PARAMETERS: Carbon Steel 1018, 1020, 1215 etc.											
Primary Insert: SPEX-221 Grade 606jRm					Secondary Insert: SPEX-221 Grade LTC-14						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	400-1150	600	6112	.003-.010	0.003	18.3	0.100	0.375	0.69	0.52
205E0043ASM2 205E0043BSM2	0.437	400-1150	600	5245	.003-.010	0.004	21.0	0.100	0.437	0.92	0.69
205E0050ASM2 205E0050BSM2	0.500	400-1150	600	4584	.003-.010	0.004	18.3	0.100	0.500	0.92	0.69
205E0062ASM2	0.625	400-1150	600	3667	.003-.010	0.004	29.3	0.100	0.625	1.83	1.38
205E0075ASM2	0.750	400-1150	600	3056	.003-.010	0.004	36.7	0.100	0.750	2.75	2.06
205E0100ASM2	1.000	400-1150	600	2292	.003-.010	0.004	36.7	0.100	1.000	3.67	2.75

MACHINING PARAMETERS: Alloyed Steel 4130, 4150, 4340 etc.											
Primary Insert: SPEX-221 Grade 606jRm					Secondary Insert: SPEX-221 Grade LTC-14						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	400-900	600	6112	.003-.008	0.003	18.3	0.100	0.375	0.69	0.52
205E0043ASM2 205E0043BSM2	0.437	400-900	600	5245	.003-.008	0.004	21.0	0.100	0.437	0.92	0.69
205E0050ASM2 205E0050BSM2	0.500	400-900	600	4584	.003-.008	0.004	18.3	0.100	0.500	0.92	0.69
205E0062ASM2	0.625	400-900	600	3667	.003-.008	0.004	29.3	0.100	0.625	1.83	1.38
205E0075ASM2	0.750	400-900	600	3056	.003-.008	0.004	36.7	0.100	0.750	2.75	2.06
205E0100ASM2	1.000	400-900	600	2292	.003-.008	0.004	36.7	0.100	1.000	3.67	2.75

MACHINING PARAMETERS: Titanium and Titanium Alloy											
Primary Insert: SPEX-221 Grade 586XRm					Secondary Insert: SPEX-221 Grade LTC-10						
Style Cutter	DIA	SFM Range	SFM	RPM	FPT Range	FPT	IPM	DOC	WOC	MRR CU/IN	HP
205E0037ASM2 205E0037BSM2	0.375	120-320	200	2037	.003-.010	0.003	6.1	0.100	0.375	0.23	0.20
205E0043ASM2 205E0043BSM2	0.437	120-320	200	1748	.003-.010	0.004	7.0	0.100	0.437	0.31	0.27
205E0050ASM2 205E0050BSM2	0.500	120-320	200	1528	.003-.010	0.004	6.1	0.100	0.500	0.31	0.27
205E0062ASM2	0.625	120-320	200	1222	.003-.010	0.004	9.8	0.100	0.625	0.61	0.54
205E0075ASM2	0.750	120-320	200	1019	.003-.010	0.004	12.2	0.100	0.750	0.92	0.81
205E0100ASM2	1.000	120-320	200	764	.003-.010	0.004	12.2	0.100	1.000	1.22	1.08

205 SERIES Promotional Kit Offering

9-586  
8-600

KIT DESIGNATIONS (Contents and Quantity)	205E0037ASM2-W050R	205E0037BSM2-W050R	205E0043ASM2-W050R	205E0043BSM2-W050R	205E0050ASM2-W050R	205E0050BSM2-W050R	205E0062ASM2-W062R	205E0075ASM2-W075R	205E0100ASM2-W075R	SPEX-221 Grade 586XRm	SPEX-221 Grade 606jRm	Torx Locking Screw
205KIT-6-AD-586XRM	1	-	1	-	1	-	1	1	1	16	-	4
205KIT-6-AD-586XRM-B	-	1	-	1	-	1	1	1	1	8	-	2
205KIT-3-LD-586XRM	-	-	-	-	-	-	1	1	1	8	-	2
205KIT-3-SD-586XRM	1	-	1	-	1	-	-	-	-	8	-	2
205KIT-3-SD-586XRM-B	-	1	-	1	-	1	-	-	-	8	-	2
205KIT-6-AD-606JRM	1	-	1	-	1	-	1	1	1	-	8	2
205KIT-6-AD-606JRM-B	-	1	-	1	-	1	1	1	1	-	8	2
205KIT-3-LD-606JRM	-	-	-	-	-	-	1	1	1	-	8	2
205KIT-3-SD-606JRM	1	-	1	-	1	-	-	-	-	-	8	2
205KIT-3-SD-606JRM-B	-	1	-	1	-	1	-	-	-	-	8	2

205E0037ASM2-W050R

205E0062ASM2-W062R

205E0043ASM2-W050R

205E0075ASM2-W075R

205E0050ASM2-W050R

205E0100ASM2-W075R



Torx Driver



SPEX-221 Inserts  
Grade 606jRm



Locking  
Screws

205KIT-6-AD-606jRm



# Ave Type

# Extended Range Group

205 SERIES Kit Price List			
KIT DESIGNATION		KIT DESIGNATION	PRICE
Standard Length		<b>NEW! Rigid Stub Length</b>	
205KIT-6-AD-586XRM		205KIT-6-AD-586XRM-B	\$649
205KIT-3-LD-586XRM			\$459
205KIT-3-SD-586XRM		205KIT-3-SD-586XRM-B	\$289
205KIT-6-AD-606JRM		205KIT-6-AD-606JRM-B	\$649
205KIT-3-LD-606JRM			\$459
205KIT-3-SD-606JRM		205KIT-3-SD-606JRM-B	\$289

205 SERIES Price List			
CUTTER DESIGNATION		CUTTER DESIGNATION	PRICE
Standard Length		<b>NEW! Rigid Stub Length</b>	
205E0037ASM2-W050R		205E0037BSM2-W050R	\$83
205E0043ASM2-W050R		205E0043BSM2-W050R	\$83
205E0050ASM2-W050R		205E0050BSM2-W050R	\$83
205E0062ASM2-W062R			\$109
205E0075ASM2-W075R			\$137
205E0100ASM2-W075R			\$181

Ave Type - 205 SERIES Insert Price List							
INSERT	GRADE	10 - 49	50 - 99	100 - 199	200+	QNPB	BASE
SPEX-221	LTC-10	\$4.84	\$4.57	\$4.03	\$3.61	463	\$3.23
	LTC-14	\$4.84	\$4.57	\$4.03	\$3.61	463	\$3.23
	586XRm	\$6.74	\$6.47	\$5.94	\$5.51	292	\$5.14
	606jRm	\$6.74	\$6.47	\$5.94	\$5.51	292	\$5.14
SPEX-222	LTC-10	\$4.84	\$4.57	\$4.03	\$3.61	463	\$3.23
	LTC-14	\$4.84	\$4.57	\$4.03	\$3.61	463	\$3.23
	586XRm	\$6.74	\$6.47	\$5.94	\$5.51	292	\$5.14
	606jRm	\$6.74	\$6.47	\$5.94	\$5.51	292	\$5.14

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*Extended Range Group*

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**LOVEJOY**

*Extended Range Group*  
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