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NEW LINE OF CUTTERS WITH SETTING ANGLE 90°
FOR ECONOMICAL MILLING WITH INSERTS

LNGX12 and LNGU16

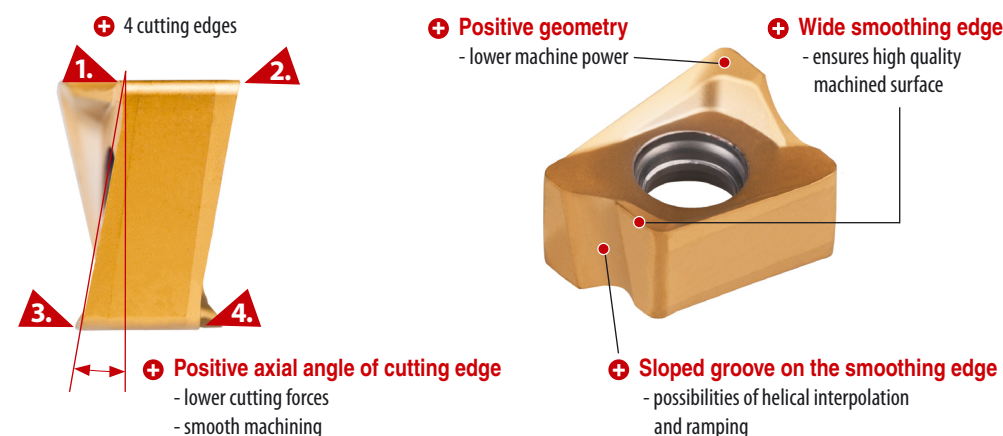
AVAILABLE ALSO IN NEW GRADES WITH MTCVD COATING



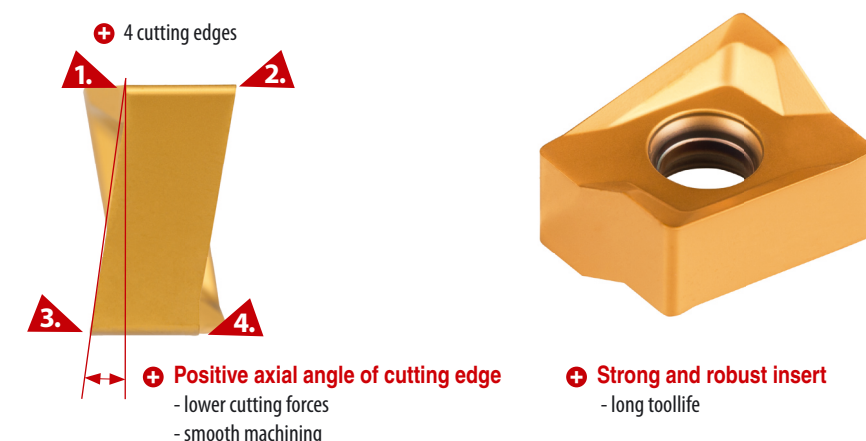
CUTTING TOOLS WITH LNGX 12 AND LNGU 16 INSERTS

Both-side inserts with 4 cutting edges

LNGX 120508ER-M



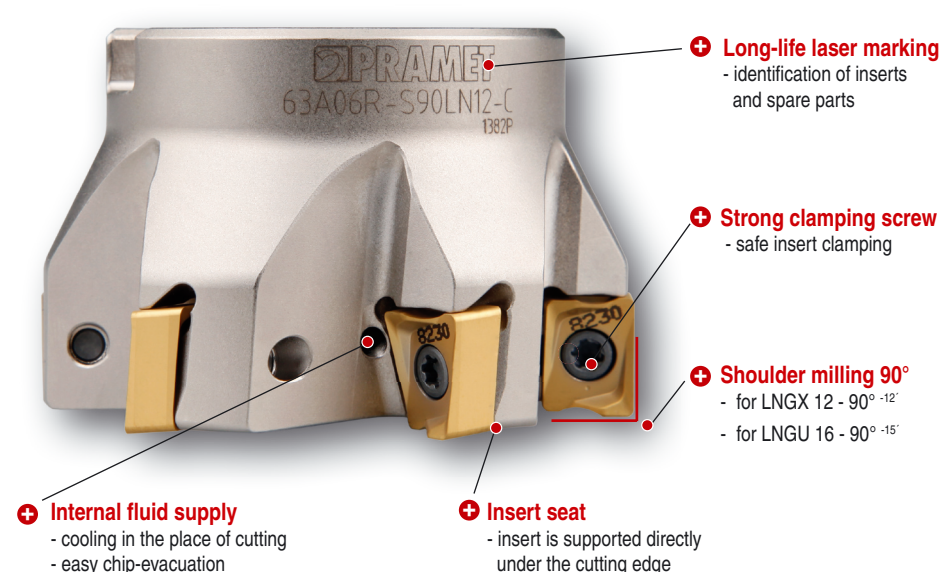
LNGU 160708SR-M



90° cutters for economical machining with LNGX12 and LNGU 16 inserts

Universal use:
face milling,
shoulder milling,
slotting
and grooving

PLUS
for LNGX 12
milling by helical
interpolation
ramping
progressive
plunging



PRAMET
AGE **MILL**

both-side inserts
LNGX 12 and LNGU
16 with 4 cutting
edges

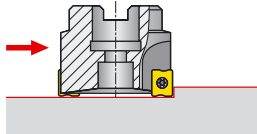
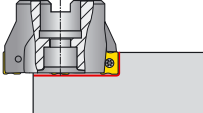
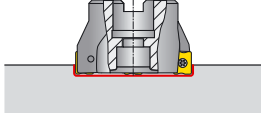
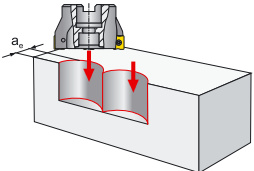
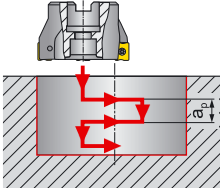
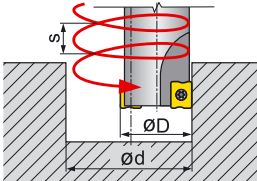
periphery grinded
inserts for precise
milling

ramping and helical
interpolation
for LNGX 12

high quality
of machined
surface

wide cutter
assortment

Wide area of applications of new milling cutters with inserts LNGX 12 and LNGU 16

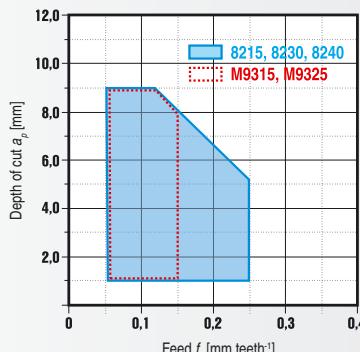
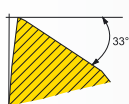
FACE MILLING LNGX 12 $R_a \leq 0,7 \mu\text{m}$ LNGU 16 $R_a \leq 0,7 \mu\text{m}$	SHOULDER MILLING areas link-up $x_{\text{max}} \leq 0,03 \text{ mm}$	SLOT MILLING LNGX 12 $a_{\text{pmax}} = 9 \text{ mm}$ LNGU 16 $a_{\text{pmax}} = 13 \text{ mm}$	PLUNGE MILLING $a_{\text{emax}} = 3,5 \text{ mm}$ for LNGX 12 $a_{\text{emax}} = 7 \text{ mm}$ for LNGU 16	PROGRESSIVE PLUNGING for LNGX 12 $a_{\text{pmax}} = 0,4 \text{ mm}$																																																
																																																				
RAMPING for LNGX 12	<table><tr><th>cutter Ø</th><th>$\alpha_{\text{max}} [^\circ]$</th></tr><tr><td>25</td><td>2,20</td></tr><tr><td>32</td><td>1,20</td></tr><tr><td>40</td><td>0,85</td></tr><tr><td>50</td><td>0,65</td></tr><tr><td>63</td><td>0,45</td></tr><tr><td>80</td><td>0,35</td></tr><tr><td>100</td><td>0,25</td></tr><tr><td>110</td><td>0,2</td></tr></table>	cutter Ø	$\alpha_{\text{max}} [^\circ]$	25	2,20	32	1,20	40	0,85	50	0,65	63	0,45	80	0,35	100	0,25	110	0,2	MILLING BY HELICAL INTERPOLATION for LNGX 12	<table><tr><th>cutter Ø</th><th>d_{min}</th><th>s_{max}</th><th>d_{max}</th><th>s_{max}</th></tr><tr><td>25</td><td>43</td><td>2,20</td><td>48</td><td>2,80</td></tr><tr><td>32</td><td>57</td><td>1,65</td><td>62</td><td>2,00</td></tr><tr><td>40</td><td>73</td><td>1,55</td><td>78</td><td>1,75</td></tr><tr><td>50</td><td>93</td><td>1,50</td><td>98</td><td>1,70</td></tr><tr><td>63</td><td>119</td><td>1,40</td><td>124</td><td>1,50</td></tr></table>	cutter Ø	d_{min}	s_{max}	d_{max}	s_{max}	25	43	2,20	48	2,80	32	57	1,65	62	2,00	40	73	1,55	78	1,75	50	93	1,50	98	1,70	63	119	1,40	124	1,50	
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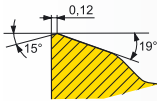
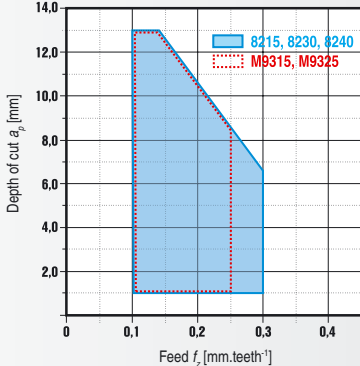
Assortment of inserts LNGX 12/LNGU 16

Basic shape of insert		Cutting condition		Initial cutting conditions					
				P	M	K	N	S	H
	LNGX 120508ER-M M9315	feed	[mm.teeth ⁻¹]	0,05 - 0,15	-	0,05 - 0,15	-	-	0,1 - 0,2
		depth of cut	[mm]	1 - 9	-	1 - 9	-	-	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	255 - 475	-	240 - 450	-	-	50 - 95
	LNGX 120508ER-M M9325	feed	[mm.teeth ⁻¹]	0,05 - 0,15	0,05 - 0,11	-	-	0,05 - 0,09	-
		depth of cut	[mm]	1 - 9	1 - 6,75	-	-	1 - 5,4	-
		cutting speed	[m.min ⁻¹]	250 - 420	150 - 250	-	-	50 - 125	-
	LNGX 120508ER-M 8215	feed	[mm.teeth ⁻¹]	0,05 - 0,25	0,05 - 0,19	0,05 - 0,25	-	0,05 - 0,15	0,1 - 0,2
		depth of cut	[mm]	1 - 9	1 - 6,75	1 - 9	-	1 - 5,4	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	185 - 255	110 - 150	175 - 240	-	35 - 75	35 - 50
	LNGX 120508ER-M 8230	feed	[mm.teeth ⁻¹]	0,05 - 0,25	0,05 - 0,19	0,05 - 0,25	-	0,05 - 0,15	0,1 - 0,2
		depth of cut	[mm]	1 - 9	1 - 6,75	1 - 9	-	1 - 5,4	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	160 - 245	95 - 145	150 - 235	-	30 - 75	30 - 50
	LNGX 120508ER-M 8240	feed	[mm.teeth ⁻¹]	0,05 - 0,25	0,05 - 0,19	0,05 - 0,25	-	0,05 - 0,15	-
		depth of cut	[mm]	1 - 9	1 - 6,75	1 - 9	-	1 - 5,4	-
		cutting speed	[m.min ⁻¹]	145 - 205	85 - 120	135 - 190	-	25 - 60	-
	LNGU 160708SR-M M9315	feed	[mm.teeth ⁻¹]	0,1 - 0,25	-	0,1 - 0,25	-	-	0,1 - 0,2
		depth of cut	[mm]	1 - 13	-	1 - 13	-	-	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	205 - 375	-	190 - 355	-	-	40 - 75
	LNGU 160708SR-M M9325	feed	[mm.teeth ⁻¹]	0,1 - 0,25	0,1 - 0,19	-	-	0,1 - 0,15	-
		depth of cut	[mm]	1 - 13	1 - 9,75	-	-	1 - 7,8	-
		cutting speed	[m.min ⁻¹]	215 - 355	125 - 210	-	-	40 - 105	-
	LNGU 160708SR-M 8215	feed	[mm.teeth ⁻¹]	0,1 - 0,3	0,1 - 0,23	0,1 - 0,3	-	0,1 - 0,18	0,1 - 0,2
		depth of cut	[mm]	1 - 13	1 - 9,75	1 - 13	-	1 - 7,8	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	175 - 245	105 - 145	165 - 230	-	35 - 70	35 - 45
	LNGU 160708SR-M 8230	feed	[mm.teeth ⁻¹]	0,1 - 0,3	0,1 - 0,23	0,1 - 0,3	-	0,1 - 0,18	0,1 - 0,2
		depth of cut	[mm]	1 - 13	1 - 9,75	1 - 13	-	1 - 7,8	0,3 - 1,5
		cutting speed	[m.min ⁻¹]	150 - 240	90 - 140	140 - 225	-	30 - 70	30 - 45
	LNGU 160708SR-M 8240	feed	[mm.teeth ⁻¹]	0,1 - 0,3	0,1 - 0,23	0,1 - 0,3	-	0,1 - 0,18	-
		depth of cut	[mm]	1 - 13	1 - 9,75	1 - 13	-	1 - 7,8	-
		cutting speed	[m.min ⁻¹]	140 - 200	80 - 120	130 - 190	-	25 - 60	-



Indexable cutting inserts LNGX12 and LNGU 16

Geometry	Photo	Workpiece material group					Diagram of application	Description	Applied to inserts: LNGX 120508ER-M	
		Milling	P	M	K	N				S
LNGX 12-M		Finishing	■	□	■	■	■		- high positive geometry - suitable for machining of material groups P and K - for light and medium machining	
	Medium	■	□	■						
		Roughing								
	Profile of cutting edge									

LNGU 16-M	Geometry	Photo	Workpiece material group					Diagram of application	Description	Applied to inserts: LNGU 160708SR-M
			Milling	G	M	K	N	S		
			Finishing	■	■	■	■	■		
	Profile of cutting edge		Medium	■	■	■	■	■		
			Roughing	■	■	■	■	■		
										- high positive geometry - suitable for machining of material groups P and K - for medium machining - suitable geometry for non-stable cutting conditions
									Range of cutting conditions:	
									f_z	0,1 ÷ 0,3 [mm.tooth ⁻¹] (0,1 ÷ 0,25 for grade MT-CVD)
									a_p	1,0 ÷ 13,0 [mm]
									■ Main application ■ Other applications □ Conditional application	

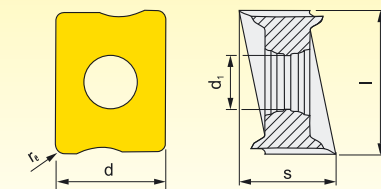
New cutting grades with MT-CVD coating

NEW

M9315

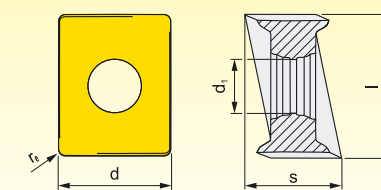
10	20	30	40	P	M	K	N	S	H
■				■					
■									
</									

LNGX 12



Size	(l)	d	s	d ₁	r _ε
12	12,00	9,50	8,10	4,50	0,80

LNGU 16



Size	(l)	d	s	d ₁	r _ε
16	16.60	13.20	10.00	5.70	0.80

- Stock Assortment
- Non-stock Assortment

All dimensions in [mm]

Marking of clamping screw for LNGX 12

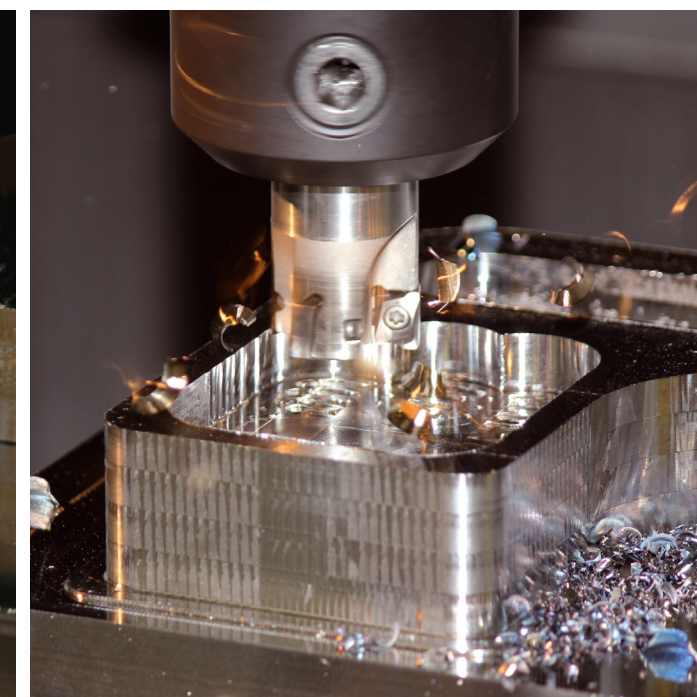
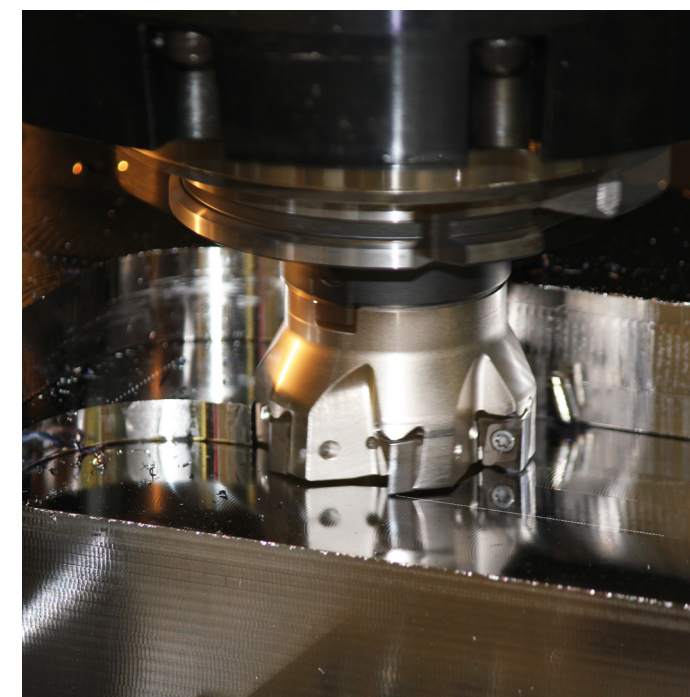
US44012-T15P

clamping screw	head cone angle (4°~40°)	thread diameter (4=M4)	screw length (12mm)	Torx 15P
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Marking of clamping screw for LNGU 16

US45012-T20P

clamping screw	head cone angle (4~40°)	thread diameter (50=M5)	screw length (12mm)	Torx 20P
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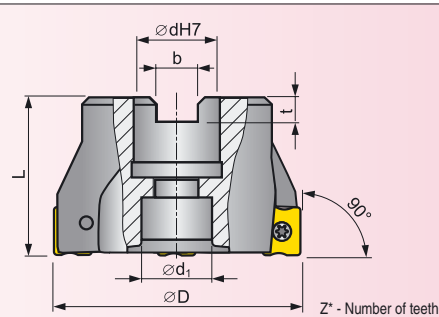
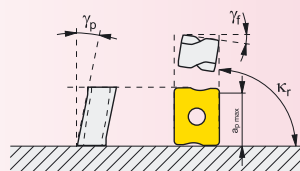


S90LN12

Shoulder milling cutters with inserts LNGX 12



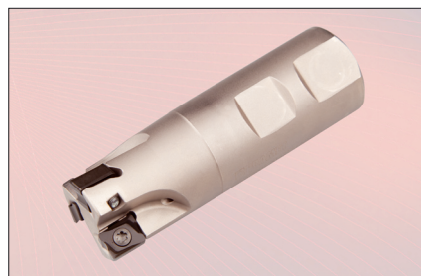
γ_p	-6°	κ_r	90°
γ_f	-14°÷-15°	$a_{p\ max}$	9 mm



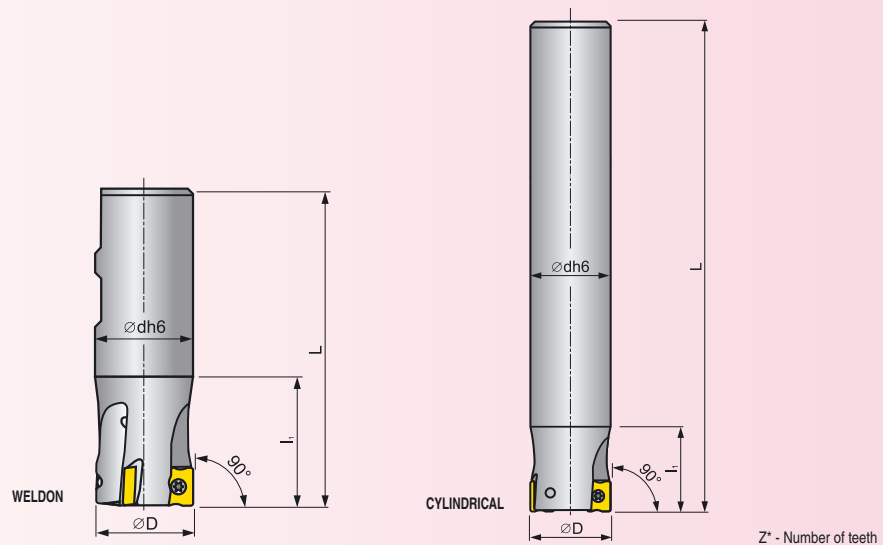
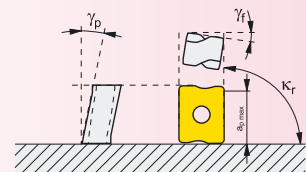
ISO	Assortment	Dimensions							[kg]	Cooling	Spare parts			Inserts
		D	dh7	d ₁	L	b	t	Z*						
40A04R-S90LN12-C	●	40	16	14	40	8,4	5,6	4	0,2	+	US44012-T15P	D-T08P/T15P	FG-15	LNGX 120508ER-M
50A04R-S90LN12-C	●	50	22	18	40	10,4	6,3	4	0,3	+				
50A05R-S90LN12-C	●	50	22	18	40	10,4	6,3	5	0,3	+				
63A04R-S90LN12-C	●	63	22	18	40	10,4	6,3	4	0,5	+				
63A06R-S90LN12-C	●	63	22	18	40	10,4	6,3	6	0,5	+				
80A05R-S90LN12-C	●	80	27	38	50	12,4	7,0	5	1,0	+				
80A07R-S90LN12-C	●	80	27	38	50	12,4	7,0	7	1,0	+				
100A06R-S90LN12-C	●	100	32	45	50	14,4	8,0	6	1,7	+				
100A08R-S90LN12-C	●	100	32	45	50	14,4	8,0	8	1,7	+				
110A06R-S90LN12-C	●	110	32	45	50	14,4	8,0	6	2,3	+				

SLN12

Shoulder end milling cutters with inserts LNGX 12



γ_p	-6°÷-8°	κ_r	90°
γ_f	-15°÷-23°	$a_{p\ max}$	9 mm



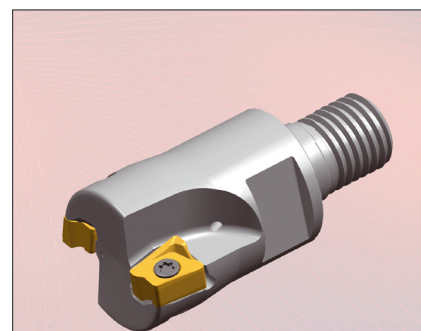
ISO	Assortment	Dimensions					[kg]	Cooling	Spare parts			Inserts
		D	L	l ₁	dh6	Z*						
WELDON	25A2R042B25-SLN12-C	●	25	99	42	25	2	0,1	+	US44012-T15P	FLAG T15P	LNGX 120508ER-M
	32A3R042B32-SLN12-C	●	32	103	42	32	3	0,5	+			
	40A4R050B32-SLN12-C	●	40	111	50	32	4	0,6	+			
	25A2R034A25-SLN12-C	●	25	170	34	25	2	0,5	+			
CYLINDRICAL	25A2R080A25-SLN12-C	●	25	170	80	25	2	0,5	+			
	32A2R034A32-SLN12-C	●	32	195	34	32	2	0,9	+			
	32A2R090A32-SLN12-C	●	32	195	90	32	2	0,9	+			

● Stock Assortment ○ Non-stock Assortment

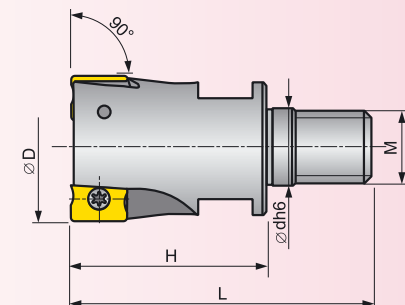
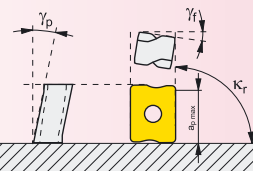
All dimensions in [mm]

SLN12

Exchangeable heads for modular system with inserts LNGX12



γ_p	-6°	κ_r	90°
γ_f	-15°	$a_{p\ max}$	9 mm



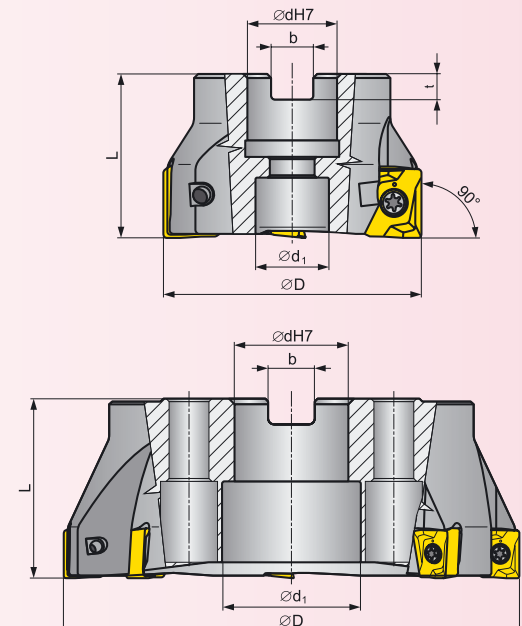
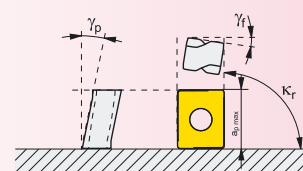
ISO	Assortment	Dimensions					[kg]	Cooling	Spare parts			Inserts
		D	L	H	dh6	Z*						
32A2R043M16-SLN12-C	●	32	66	43	17	2	0,2	+	US44012-T15P	FLAG T15P	LNGX 120508ER-M	
40A3R043M16-SLN12-C	●	40	66	43	17	3	0,2	+				

S90LN16

Shoulder milling cutters with inserts LNGU 16



γ_p	-6°	κ_r	90°
γ_f	-10,5°	$a_{p\ max}$	13 mm



ISO	Assortment	Dimensions							[kg]	Cooling	Spare parts			Inserts
		D	dh7	d ₁	L	b	t	Z*						
63A04R-S90LN16-C	●	63	22	18	40	10,4	6,3	4	0,5	+	US45012-T20P	SDR T20P-T	LNGU 16	
63A05R-S90LN16-C	●	63	22	18	40	10,4	6,3	5	0,5	+				
80A04R-S90LN16-C	●	80	27	38	50	12,4	7,0	4	1,0	+				
80A06R-S90LN16-C	●	80	27	38	50	12,4	7,0	6	1,0	+				
100A05R-S90LN16-C	●	100	32	45	50	14,4	8,0	5	1,8	+				
100A07R-S90LN16-C	●	100	32	45	50	14,4	8,0	7	1,7	+				
125A06R-S90LN16-C	●	125	40	56	63	16,4	9,0	6	3,5	+				
125A08R-S90LN16-C	●	125	40	56	63	16,4	9,0	8	3,3	+				
140A06R-S90LN16-C	●	140	40	56	63	16,4	9,0	6	4,5	+				
160C08R-S90LN16	●	160	40	66,7	63	16,4	9,0	8	5,7					
175C08R-S90LN16	●	175	40	66,7	63	16,4	9,0	8	6,7					

● Stock Assortment ○ Non-stock Assortment

All dimensions in [mm]