

PRAMET
AGE **MILL**



NEW GENERATION OF MILLING CUTTERS WITH INSERTS **ADMX**

HIGH PRODUCTIVITY OF MILLING
PRECISE MILLING TOOLS
WIDE APPLICATION AREA



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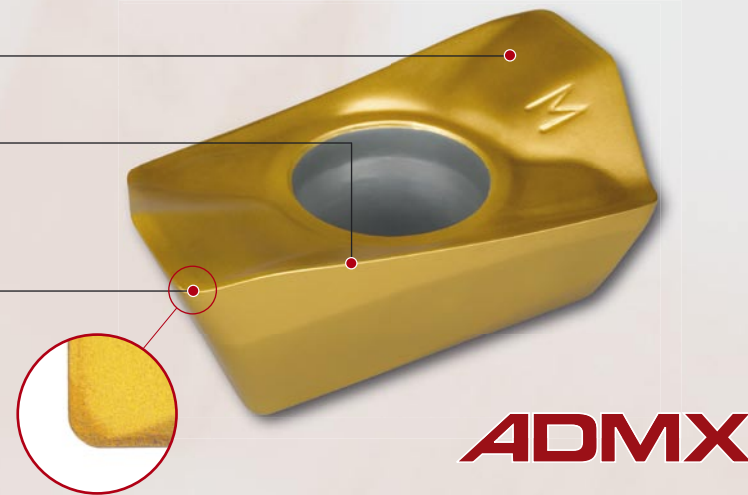
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PRAMET
AGE **MILL**

NEW GENERATION OF INSERTS AND TOOLS FOR MILLING

New generation of inserts ADMX16

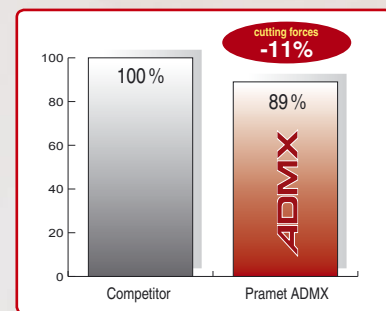
- Highly Positive Geometry (rake angle 25°)**
 - lower machine power
- Optimized Cutting Edge Shape**
 - higher impact resistance
 - lower cutting forces
 - smooth machining
- Smooth Cutting Edge Continuity**
 - higher tool life
 - better roughness quality



ADMX

New generation of milling tools with inserts ADMX16 / ADEX 16

- New Technology and Heat Treatment**
 - higher tool accuracy
- Long-Life Laser Marking**
 - identification of inserts and spare parts
- Special Surface Finishing**
 - better corrosion resistance
 - abrasive wear reduction
 - lower friction resistance
- Internal Fluid Supply**
 - optimal cooling
- Tool Body Design**
 - easy chip removing
- Clamping Screw M4 TORX Plus**
 - reliable insert fixing
- Highly Positive Geometry**
 - cutting forces reduction
 - higher productivity



Cutting forces reduction



Clamping hole with elliptical fixing
- optimal insert fixed

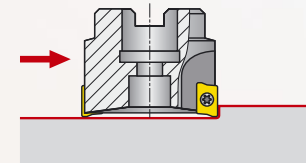


Excellent chip removing

Wide area of applications of new milling cutters with inserts ADMX16

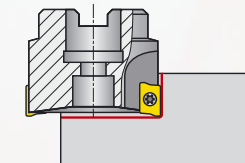
FACE MILLING

currently achieved roughness
by geometry F
 $Ra \leq 0,6 [\mu m]$



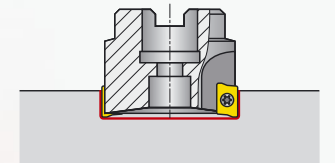
SHOULDER MILLING

areas link-up
 $x_{max} \leq 0,03 [mm]$

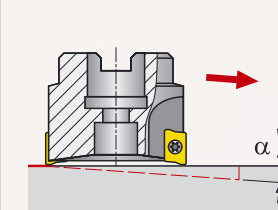


SLOT MILLING

achieved roughness
 $Ra \leq 1,6 [\mu m]$



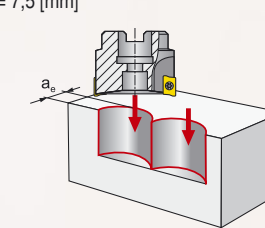
RAMPING



ø cutter	α _{max}
ø 25	12,5°
ø 32	7,5°
ø 40	5,0°
ø 50	3,5°
ø 63	2,5°
ø 80	2,0°
ø 100	1,0°
ø 125	-
ø 160	-

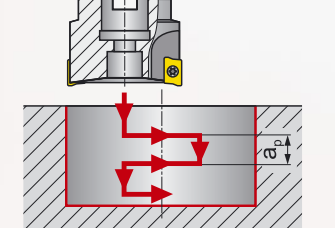
PLUNGE MILLING

axial depth of cut
 $a_{emax} = 7,5 [mm]$



PROGRESSIVE PLUNGING

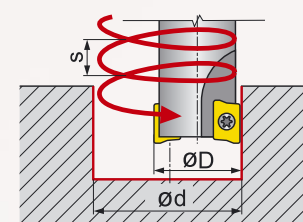
$a_{pmax} = 2,5 [mm]$



MILLING BY HELICAL INTERPOLATION

- END MILLING CUTTERS

to diameter 40 mm

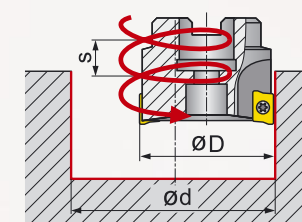


ø cutter	d _{min}	d _{max}	s _{max}
25	42	-	10,0
	-	48	12,5
32	55	-	6,5
	-	62	9,0
40	72	-	5,0
	-	78	8,0

MILLING BY HELICAL INTERPOLATION

- FACE MILLING CUTTERS

to diameter 80 mm



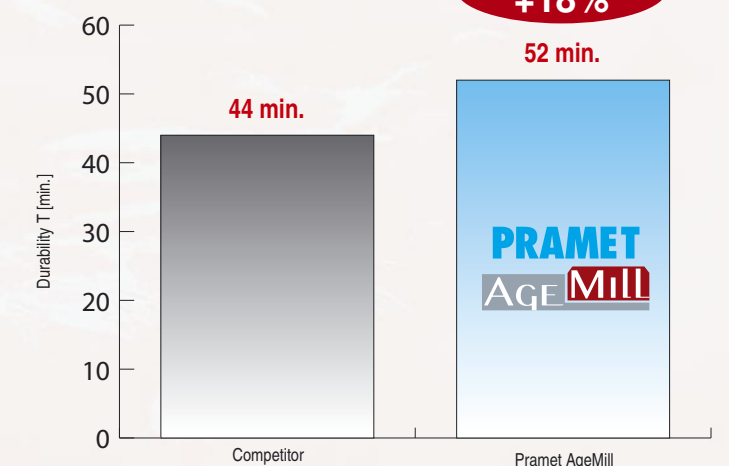
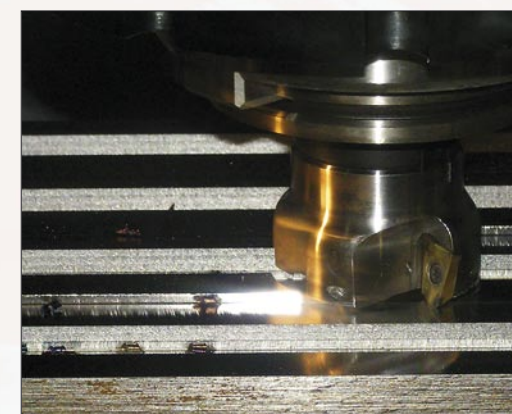
ø cutter	d _{min}	d _{max}	s _{max}
40	72	-	5,0
	-	78	8,0
50	92	-	4,5
	-	98	6,0
63	118	-	4,0
	-	124	5,0
80	136	-	1,5
	-	158	2,0

Practical test of milling tools with inserts ADMX16

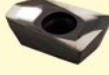
EXAMPLE:

Machine: milling centre
Type: MCV1270 Power
Operation: face milling with interrupted cut
Workpiece: steel C45
Inserts: ADMT 160608 P25 competitor
ADMX 160608PR-R; 2230 Pramet
Cooling: with cooling

Cutting speed	v_c	300 m.min ⁻¹
Feed per tooth	f_z	0,2 mm.tooth ⁻¹
Axial depth of cut	a_p	5,0 mm
Radial depth of cut	a_e	50 mm



durability
+18%

Basic shape of insert		Cutting condition		Initial cutting conditions					
				P	M	K	N	S	H
ADMX 160608SR-F; 8016		feed	[mm.tooth ⁻¹]	0,07 ÷ 0,15	0,07 ÷ 0,11	0,07 ÷ 0,15	0,07 ÷ 0,15	0,07 ÷ 0,09	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	1,0 ÷ 1 ÷ 13,0	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	165 ÷ 255	95 ÷ 150	155 ÷ 240	245 ÷ 890	30 ÷ 75	-
ADMX 160608SR-F; 8230		feed	[mm.tooth ⁻¹]	0,07 ÷ 0,15	0,07 ÷ 0,11	0,07 ÷ 0,15	0,07 ÷ 0,15	0,07 ÷ 0,09	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	1,0 ÷ 13,0	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	195 ÷ 290	115 ÷ 170	185 ÷ 275	290 ÷ 1015	35 ÷ 85	-
ADMX 160608SR-F; 8240		feed	[mm.tooth ⁻¹]	0,07 ÷ 0,15	0,07 ÷ 0,11	0,07 ÷ 0,15	-	0,07 ÷ 0,09	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	165 ÷ 230	95 ÷ 135	155 ÷ 215	-	30 ÷ 65	-
ADMX 160608SR-M; 2215		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	-	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	-	-
		cutting speed	[m.min ⁻¹]	230 ÷ 330	135 ÷ 195	215 ÷ 310	-	-	-
ADMX 160608SR-M; 2230		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	-	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	-	-
		cutting speed	[m.min ⁻¹]	180 ÷ 285	105 ÷ 170	170 ÷ 270	-	-	-
ADMX 160608SR-M; 8016		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	150 ÷ 240	90 ÷ 140	140 ÷ 225	-	30 ÷ 70	-
ADMX 160608SR-M; 8230		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	175 ÷ 275	105 ÷ 165	165 ÷ 260	-	35 ÷ 80	-
ADMX 160608SR-M; 8240		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	160 ÷ 225	95 ÷ 135	150 ÷ 210	-	30-65	-
ADMX 160608PR-R; 2215		feed	[mm.tooth ⁻¹]	0,17 ÷ 0,35	0,17 ÷ 0,26	0,17 ÷ 0,35	-	-	0,10 ÷ 0,20
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	-	0,3 ÷ 1,5
		cutting speed	[m.min ⁻¹]	220 ÷ 315	130 ÷ 185	205 ÷ 295	-	-	45 ÷ 65
ADMX 160608PR-R; 2230		feed	[mm.tooth ⁻¹]	0,17 ÷ 0,35	0,17 ÷ 0,26	0,17 ÷ 0,35	-	-	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	-	-
		cutting speed	[m.min ⁻¹]	170 ÷ 255	100 ÷ 150	160 ÷ 240	-	-	-
ADMX 160608PR-R; 8016		feed	[mm.tooth ⁻¹]	0,17 ÷ 0,35	0,17 ÷ 0,26	0,17 ÷ 0,35	-	0,17 ÷ 0,21	0,10 ÷ 0,20
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	0,3 ÷ 1,5
		cutting speed	[m.min ⁻¹]	135 ÷ 210	80 ÷ 125	125 ÷ 195	-	25 ÷ 60	30 ÷ 45
ADMX 160608PR-R; 8230		feed	[mm.tooth ⁻¹]	0,17 ÷ 0,35	0,17 ÷ 0,26	0,17 ÷ 0,35	-	0,17 ÷ 0,21	0,10 ÷ 0,20
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	0,3 ÷ 1,5
		cutting speed	[m.min ⁻¹]	165 ÷ 250	95 ÷ 150	155 ÷ 235	-	30 ÷ 75	35 ÷ 55
ADMX 160608PR-R; 8240		feed	[mm.tooth ⁻¹]	0,17 ÷ 0,35	0,17 ÷ 0,26	0,17 ÷ 0,35	-	0,17 ÷ 0,21	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	160 ÷ 220	95 ÷ 130	150 ÷ 205	-	30 ÷ 65	-
ADMX 160616SR-M; 8016		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,30	0,10 ÷ 0,23	0,10 ÷ 0,30	-	0,10 ÷ 0,18	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	155 ÷ 265	90 ÷ 155	145 ÷ 250	-	30 ÷ 75	-
ADMX 160616SR-M; 8230		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	195 ÷ 300	115 ÷ 180	185 ÷ 285	-	35 ÷ 90	-
ADMX 160616SR-M; 8240		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,30	0,10 ÷ 0,23	0,10 ÷ 0,30	-	0,10 ÷ 0,18	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	175 ÷ 250	105 ÷ 150	165 ÷ 235	-	35 ÷ 75	-
ADMX 160632SR-M; 8016		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,30	0,10 ÷ 0,23	0,10 ÷ 0,30	-	0,10 ÷ 0,18	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	165 ÷ 275	95 ÷ 165	155 ÷ 260	-	30 ÷ 80	-
ADMX 160632SR-M; 8230		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	205 ÷ 315	120 ÷ 185	190 ÷ 295	-	40 ÷ 90	-
ADMX 160632SR-M; 8240		feed	[mm.tooth ⁻¹]	0,10 ÷ 0,25	0,10 ÷ 0,19	0,10 ÷ 0,25	-	0,10 ÷ 0,15	-
		depth of cut	[mm]	1,0 ÷ 13,0	1,0 ÷ 9,8	1,0 ÷ 13,0	-	1,0 ÷ 7,8	-
		cutting speed	[m.min ⁻¹]	185 ÷ 265	110 ÷ 155	175 ÷ 250	-	35 ÷ 75	-
ADEX 160608FR-FA; HF7		feed	[mm.tooth ⁻¹]	-	-	-	0,03 ÷ 0,20	-	-
		depth of cut	[mm]	-	-	-	1,0 ÷ 13	-	-
		cutting speed	[m.min ⁻¹]	-	-	-	110 ÷ 560	-	-

Geometry	Insert / Geometry	Description of geometry	Geometry	Insert / Geometry	Description of geometry
F		- highly positive geometry - first choice for machined materials group P (low carbon steel) and group M - light and medium machining	R		- in comparison to F and M nor less positive geometry - suitable for machining of materials groups P and K - suitable for medium and heavy machining
M		- highly positive geometry - suitable for machining of materials groups P, K and M - for medium machining - geometry M also on inserts with r_e 1,6 and 3,2 mm	FA		- highly positive geometry, sharp cutting edge - especially for machining in group N - polished top reduces built-up effect

all dimension in [mm]

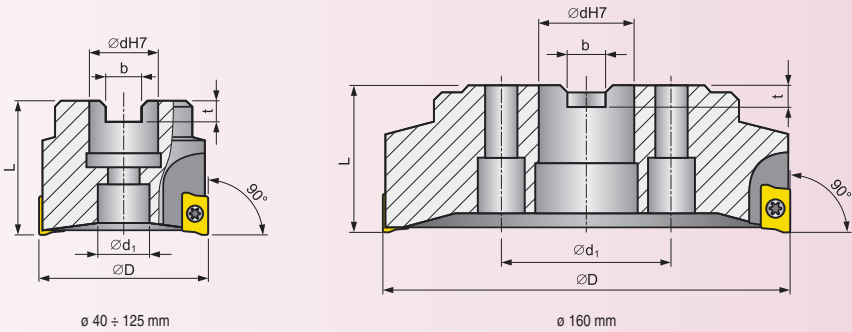
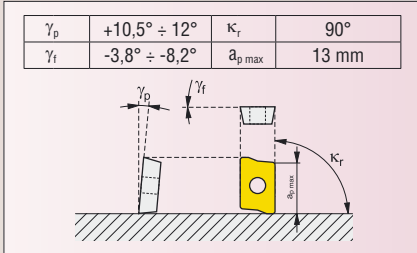
Grades - application area

2215		10 20 30 40 P M K N S H	- 1st choice for milling of grey cast iron - suitable for all types of cast iron - high wear resistance - good operation reliability
2230		10 20 30 40 P M K N S H	- good operation reliability - mechanical impact resistance - built-up effect resistance - suitable for steel, also for stainless steel and cast iron
8016		10 20 30 40 P M K N S H	- versatile grade (fit to all groups of machined materials) - small to medium chip cross section - stable cutting conditions
8230		10 20 30 40 P M K N S H	NEW - highly versatile grade - excellent wear resistance and toughness - suitable for fine, medium up to heavy machining - efficient, reliable grade
8240		10 20 30 40 P M K N S H	- excellent operation reliability - wide area of application - high mechanical impact resistance - low friction coefficient

■ main area ■ other application □ conditional application

S90AD16E

Shoulder milling cutter with ADMX 16

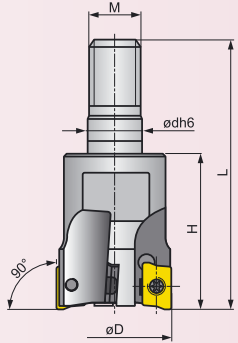
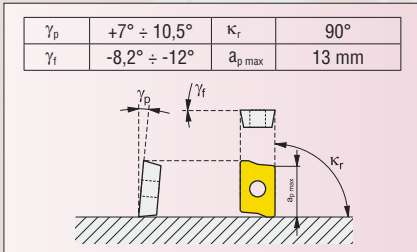


Z* - Number of teeth

ISO	Assortment	Dimensions							[kg]	Cooling	Spare Parts		Inserts
		D	dH7	d ₁	L	b	t	Z*					
40A04R- S90AD16E-C	●	40	16	14	40	8,4	5,6	4	0,16	+	US4008-T15P	SDR T15P	AD.X 1606.....
50A03R- S90AD16E-C	●	50	22	18	40	10,4	6,3	3	0,30	+			
50A05R- S90AD16E-C	●	50	22	18	40	10,4	6,3	5	0,29	+			
63A04R- S90AD16E-C	●	63	22	18	40	10,4	6,3	4	0,48	+			
63A06R- S90AD16E-C	●	63	22	18	40	10,4	6,3	6	0,46	+			
80A05R- S90AD16E-C	●	80	27	38	50	12,4	7,0	5	0,98	+			
80A07R- S90AD16E-C	●	80	27	38	50	12,4	7,0	7	0,96	+			
100A06R- S90AD16E-C	●	100	32	45	50	14,4	8,0	6	1,80	+			
100A08R- S90AD16E-C	●	100	32	45	50	14,4	8,0	8	1,68	+			
125A09R- S90AD16E-C	●	125	40	56	63	16,4	9,0	9	3,48	+			
160C10R- S90AD16E	●	160	40	67	63	16,4	9,0	10	5,70				

SAD16E

Exchangable heads with ADMX 16

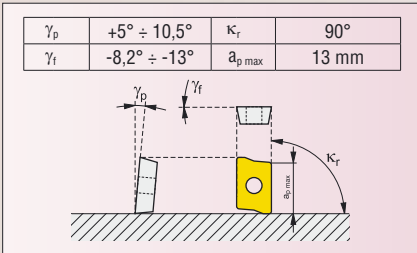


Z* - Number of teeth

ISO	Assortment	Dimensions						[kg]	Cooling	Spare Parts		Inserts
		D	L	H	dh6	M	Z*					
32A3R043M16-SAD16E-C	●	32	66	43	16	M16	3	0,16	+	US4008-T15P	SDR T15P	AD.X 1606.....
40A4R043M16-SAD16E-C	●	40	66	43	16	M16	4	0,20	+			

SAD16E

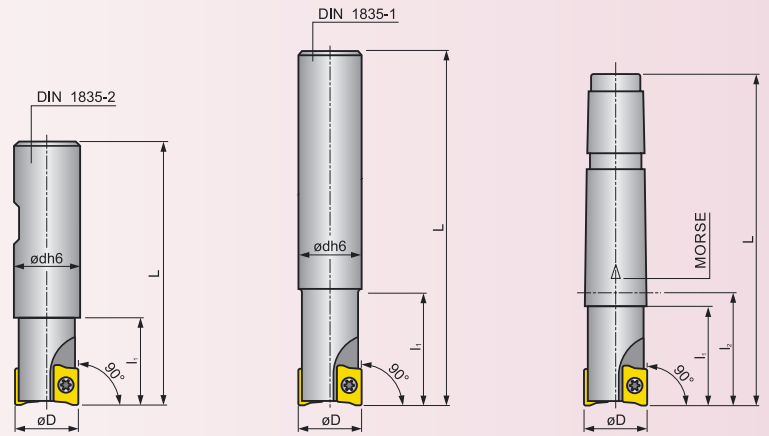
End milling cutters with ADMX 16



WELDON

CYLINDRICAL

MORSE

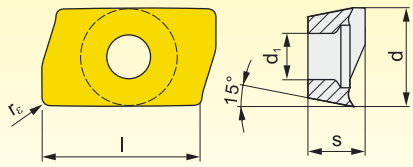


Z* - Number of teeth

ISO	Assortment	Dimensions							[kg]	Cooling	Spare Parts		Inserts
		D	L	I ₁	dh6	Morse	Z*						
WELDON											US 4008-T15P	SDR T15P	AD.X 1606....
25A2R042B25-SAD16E-C	●	25	98	42	25	-	2		0,28	+			
32A3R040B32-SAD16E-C	●	32	100	40	32	-	3		0,48	+			
40A3R050B32-SAD16E-C	●	40	110	50	32	-	3		0,60	+			
40A4R050B32-SAD16E-C	●	40	110	50	32	-	4		0,58	+			
CYLINDRICAL													
25A2R033A25-SAD16E-C	●	25	165	33	25	-	2		0,47	+			
32A3R033A32-SAD16E-C	●	32	195	33	32	-	3		0,90	+			
MORSE													
25A2R043E03-SAD16E-C	●	25	98	42	-	3	2		0,28	+			
32A3R043E03-SAD16E-C	●	32	100	40	-	3	3		0,48	+			
40A3R054E04-SAD16E-C	●	40	110	50	-	4	3		0,58	+			
40A4R054E04-SAD16E-C	●	40	110	50	-	4	4		0,60	+			

Indexable cutting inserts AD.X16

ADMX 16 / ADEX 16



Size	l	d	s	d ₁	r _e
1606	16,000	9,95	6,25	4,50	0,8 ÷ 3,2

Chip breaker	ISO	ANSI	Grade							Radius
			2215	2230	8016	8230	8240	HF7		
	ADMX 160608SR-F	ADMX -42SR-F			●	●	●			0,8
	ADMX 160608SR-M	ADMX -42SR-M	●	●	●	●	●			0,8
	ADMX 160608PR-R	ADMX -42SR-R	●	●	●	●	●			0,8
	ADMX 160616SR-M	ADMX -44SR			●	●	●			1,6
	ADMX 160632SR-M	ADMX -48SR			●	●	●			3,2
	ADEX 160608FR-FA	ADEX -42FR-FA						●		0,8

● Stock assortment ○ Non-stock assortment

all dimensions in [mm]